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The State Government of
Michigan,
8 May, 1865.

TRANSACTIONS

OF THE

State Agricultural Society

OF MICHIGAN;

WITH REPORTS OF

COUNTY AGRICULTURAL SOCIETIES,

FOR THE YEAR 1859.

PUBLISHED BY ORDER OF THE LEGISLATURE.

VOL. XI.

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TENTH ANNUAL REPORT

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY.

OFFICE OF THE MICH. STATE AG'L SOCIETY,
Detroit, November 1, 1860.

To the HON. N. G. ISBELL, *Secretary of State:*

SIR—In accordance with the law, and the directions of the Executive Committee, I herewith transmit to you the Tenth Annual Report of the Michigan State Agricultural Society.

I am, very respectfully, yours,

R. F. JOHNSTONE,
Secretary.

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STATE AGRICULTURAL REPORT, 1859.

THE STATE LAWS

RELATIVE TO

THE ENCOURAGEMENT OF AGRICULTURE.

[From the Compiled Laws of the State, page 536.]

AN ACT to incorporate the Michigan State Agricultural Society, approved March 31, 1849.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the State of Michigan,* That all persons who now are, or may hereafter become associated for the purposes of this Act, are hereby constituted a body corporate, by the name of "The Michigan State Agricultural Society," for the purpose of promoting the improvement of Agriculture and its kindred arts.

Sec. 2. For the purposes aforesaid, the Society shall possess the general powers and privileges, and be subject to the general liabilities contained in chapter fifty-five, title ten of the Revised Statutes of eighteen hundred and forty-six, so far as the same may be applicable and have not been modified or repealed; but the real or personal estates which the said Society shall be authorized to take, hold and convey, over and above its library, and its scientific and agricultural collections, shall not, at any time, exceed in amount the value of twenty thousand dollars.

Sec. 3. It shall be the duty of the Michigan State Agricultural Society to transmit to the President of the Senate, for the use of the Legislature, in the month of January, *annually*, a report and statement of its proceedings, specifying the nature of the encouragement proposed by it, and

the object for which, and persons to whom, premiums have been awarded; embracing also such accurate details of the modes of cultivation, of keeping stock, and of other important incidents, as will acquaint farmers and others with the precise manner in which the valuable results recorded can be again obtained; and presenting such other matter as the Society may judge most useful in promoting a greater and more general progress in practical agriculture.

Sec. 4. This act shall take effect immediately.

AN ACT in aid of the Michigan State Agricultural Society, approved April 7, 1851.

Section 2. It shall be the duty of such officers of the Michigan State Agricultural Society, as it may elect for that purpose, annually to regulate and award premiums on such articles, productions and improvements, as they may deem best calculated to promote the agricultural and household manufactory interests of the State, having special reference to the most economical or profitable mode of competition in raising the crop or stock, or in the fabrication of the article offered: *Provided always*, That before any premium shall be delivered, the person claiming the same, or to whom the same shall be awarded, shall deliver to the President of the Society, in writing, an accurate statement and description, verified in such manner as the officers aforesaid may direct, of the character of the soil, and the process of preparing it, including the quality of manure applied in raising the crop, or the kind and quantity of feed in feeding the animal, as the case may be; also the kind and cost of labor employed, and the total expense and total product of the crop, or the increase in value of the animal, with a view of showing accurately the resulting profit.

Sec. 3. This act shall take effect immediately.

AN ACT to provide for Publishing the Annual Report of the Michigan State Agricultural Society, approved April 7, 1851.

Section 3. The Michigan State Agricultural Society shall transmit to the Secretary of State the Annual Report of said Society for the year eighteen hundred and fifty-one, and every second year thereafter, embracing the same kind of information as is required in the third section of an act entitled, "An Act to incorporate the Michigan State Agricultural Society," approved March 31, 1849, any law to the contrary nothwithstanding.

AN ACT making an appropriation to aid the Michigan State Agricultural Society, and to provide for publishing the Annual Reports of said Society, approved February 14, 1853.

Section 2. That two thousand copies of the Annual Report of the Michigan State Agricultural Society be printed and bound annually, under the supervision of the Secretary of State, in the same manner and form as the Report of the Superintendent of Public Instruction for the year 1852; and when so completed, the Secretary of State shall reserve thirty copies for the use of the State Library, and shall deposit with the Auditor General one copy for each organized township in this State, to be sent by him to each township for the use of the library thereof; and the remaining copies shall be forwarded by the Secretary of State to the Secretary of the Michigan State Agricultural Society, for the use of said Society, under the control of the Executive Committee.

JOINT RESOLUTION relative to furnishing certain Laws, Journals and Documents to the Michigan State Agricultural Society, for the use of a Library, approved April 1, 1850.

Resolved by the Senate and House of Representatives of the State of Michigan, That the following laws and docu-

ments be and they are hereby donated to the Michigan State Agricultural Society, (if it can be done without reprint, or injury to the State Library,) to aid said Society in establishing an Agricultural Library, at such place and under such regulations as the Executive Committee thereof may prescribe, viz: One copy of the Revised Statutes of 1838 and 1846, one copy of the Session Laws, one copy of the joint documents and journals of the Senate and House of Representatives of each Legislature since, and including the year 1839, and also one copy of the Session Laws and documents of the present Legislature, and of each successive Legislature; and the Secretary of State is hereby authorized and required to transmit to the Recording Secretary of said Society the above named laws and documents as soon as practicable, who shall receive the same and place them in the Library aforesaid.

This joint resolution shall take effect and be in force from and after its passage.

CONSTITUTION

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY.

(As Amended October 1, 1858.)

Article 1. The name of this Association shall be "The Michigan State Agricultural Society," and its object shall be to promote the improvement of agriculture and its kindred arts, throughout the State of Michigan.

Art. 2. The officers of this Society shall be a President, one Vice President in each organized county in the State, a Recording Secretary, and a Treasurer, and the Corresponding Secretary of each organized County Agricultural Society shall be the Corresponding Secretary of this Society for their county; and any county not having an organized County Agricultural Society, shall not be entitled to a Corresponding Secretary of the State Society; and an Executive Committee, consisting of the President and Recording Secretary, and fourteen other members to be chosen for that purpose, and also the ex-Presidents of the Society. These officers shall be elected by a majority of the votes at the annual meeting of the Society, and shall, except the fourteen members of the Executive Committee, hold their offices for one year, and until the annual meeting of the Executive Committee. There shall be nine members of the Executive Committee elected at the meeting of the Society in 1858, eight of which members shall be chosen to serve for two years from January 1, 1859, and one member for one year from the same date; and at the next annual meeting of the Society, and annually thereafter, seven members of the Executive Committee shall be

elected to hold for two years, and until the annual meeting of the Executive Committee: *Provided*, That the officers named upon the organization of the Society shall be deemed members, and shall remain officers only until others shall be duly elected at the first annual meeting; and if a vacancy happen, it may be filled by appointment of the Executive Committtee.

Art. 3. The duties of the President, Vice President, Recording and Corresponding Secretaries, shall be such as usually pertain to their respective offices, and such also as may be prescribed by the order of the Executive Committee, as hereafter provided.

Art. 4. The Treasurer shall receive and keep an accurate account of all moneys belonging to the Society; he shall pay out its moneys only on the order of the Executive Committee, and at each annual meeting of the Society he shall make a full report of its financial transactions and condition.

Art. 5. The Executive Committee shall determine the place for holding each annual meeting and fair of the Society, and it shall call that meeting and fair at such time as it shall judge best, or between the first Monday in September and the third Monday in October, giving at least sixty days public notice thereof.

Art. 6. The Executive Committee shall direct the money appropriations of the Society, and have the control of its property; it shall make the necessary preparations for the annual fair, and issue all proper public notices and circulars in relation thereto, or to the general object of the Society; it shall prepare the necessary By-Laws of the Society, and may prescribe such duties to the other officers of the Society as are not inconsistent with the usual business of their respective offices; it shall itself obey the instructions which may be given to it at the annual meeting of the Society, and at the expiration of its term of service, shall make a full report of its proceedings. It shall

be competent for the Executive Committee, or a majority of them, to appoint a Chairman and Secretary, who may transact all such business as they may be authorized to do by said committee; and said Secretary shall sign, and said Chairman shall countersign, all orders on the Treasurer for the payment of any money directed by said committee to be paid for any purpose, and said Secretary shall keep an accurate account of all orders so drawn.

Art. 7. It shall be the duty of the Executive Committee annually to regulate and award premiums on such articles, productions and improvements as they may deem best calculated to promote the agricultural and household manufacturing interests of the State, having special reference to the most economical or popular mode of competition in raising the crops or stock, or in the fabrication of the articles offered: *Provided always*, That before any premium shall be delivered, the person claiming the same, or to whom the same shall be awarded, shall deliver to the President of the Society, in writing, an accurate statement and description, verified in such manner as the Executive Committee may direct, of the character of the soil, and the process in preparing it, including the quality and quantity of the manure applied in raising the crop, or the kind and quality of food in feeding the animal, as the case may be; also the kind and cost of labor employed, and the total expense and total productions of the crop, or the increase of value of the animal, with a view of showing accurately the exact resulting profit.

Art. 8. The Executive Committee shall meet annually, at such place as it may itself choose, on or before the second Monday in January, and shall then immediately prepare a report and abstract of the transactions of the Society during the preceding year, embracing such valuable reports from committees, statements of experiments, cultivation and improvement, proceedings of County Societies, correspondence, statistics, and other matters, the publica-

tion of which will exhibit the condition of the Agricultural Interests of Michigan, and a diffused knowledge of which will, in the judgment of the committee, add to the productiveness of agricultural and household labor, and therefore promote the general prosperity of the State; and as soon as practicable the committee shall transmit such report and abstract to the President of the Senate for the use of the Legislature.

Art. 9. No officer of the Society except the Recording Secretary, shall receive any compensation for his services. The Executive Committee shall allow said Secretary such sum for past and future services as they may deem advisable.

Art. 10. Any person may become a member of the Michigan State Agricultural Society, for one year, by paying one dollar into its treasury. Any officer of the Society may receive and forward to the Treasurer the fee requisite to a membership. By paying ten dollars into the treasury of the Society, any person may become a life member, and shall be entitled to a certificate of such membership, signed by the President and Recording Secretary.

Art. 11. The several County Agricultural Societies that now exist or may hereafter exist in this State, shall be deemed auxiliaries of the State Society, and it shall be the duty of the Executive Committee to invite and receive reports and abstracts of the County Societies, to be used in preparing the annual report to the Legislature, which is provided for by article eight of this Constitution.

Art. 12. The President and Recording Secretary of each County Agricultural Society, and all life members of this Society, may attend the annual meeting of the Executive Committee, and freely participate in all discussions which shall occur at such meeting.

Art. 13. This Constitution shall be altered only by a vote of two-thirds of the members present at an annual meeting of the Society.

ANNNUAL MEETING

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY,

DETROIT, FRIDAY, OCTOBER 7, 1859.

The members of the Michigan State Agricultural Society met at Floral Hall, on the Fair Grounds, on Friday, October 7, 1859, at 3 o'clock P. M., to elect officers for the year 1860.

The Hon. C. Dickey, of Marshall, President, called the Society to order, and stated that the business was to elect the officers for the following year. Those officers were a President, a Treasurer, a Secretary, and seven members of the Executive Committee.

On motion of Mr. Brockway, of Albion, the members proceeded to ballot informally for President, with the following result: H. G. Wells, of Kalamazoo, 27 votes; E. N. Wilcox, of Detroit, 12; J. B. Crippen, of Coldwater, 6 votes; K. S. Bingham, of Livingston, 3; A. N. Hart, of Lapeer, 3; H. H. Brown, of Detroit, 1.

The result being declared, Mr. Wilcox stated that he felt it to be an imperative duty to withdraw his name, as he could not serve the Society the coming year in any capacity.

On motion, a formal ballot was taken with the following result: H. G. Wells, 43; A. N. Hart, 3; J. B. Crippen, 2; K. S. Bingham, 1.

On motion, H. G. Wells, of Kalamazoo, was declared unanimously elected President.

The President declared the election of Secretary as next in order.

On motion of E. N. Wilcox, R. F. Johnstone, of Detroit, was declared unanimously elected Secretary.

The President declared the election of Treasurer as next in order.

On motion, B. Follett, Esq., of Ypsilanti, was declared unanimously elected Treasurer.

On motion of E. N. Wilcox, the President appointed a committee of five to report the names of seven members of the Executive Committee, and one member in place of H. G. Wells, elected President.

The committee consisted of E. N. Wilcox, Detroit; Chester Yost, Ypsilanti; D. Brockway, Albion; W. J. Baxter, Jonesville, and K. S. Bingham, Livingston.

The committee reported as follows:

T. T. Lyon, of Plymouth, Wayne county;

J. B. Crippen, of Coldwater, Branch county;

Horace Welsh, Ypsilanti, Washtenaw county;

E. H. Thomson, Flint, Genesee county;

Frederick Fowler, Hillsdale, Hillsdale county;

George K. Johnson, Grand Rapids, Kent county;

James G. Birney, Bay City, Bay county;

Charles Dickey, of Marshall, Calhoun county, to fill the vacancy occasioned by the election of H. G. Wells.

The report was accepted and unanimously adopted.

T. T. Lyon, of Plymouth, declining to serve, E. N. Wilcox, of Detroit, was chosen to fill the vacancy, and which he accepted with the understanding that it was only for the remainder of the year 1859.

R. F. JOHNSTONE,
Secretary.

Proceedings of the Executive Committee
OF THE
MICHIGAN STATE AGRICULTURAL SOCIETY.

MEETING HELD AT THE FAIR GROUNDS, DETROIT, OCT. 5, 1859.

The Executive Committee met at the President's stand on the Fair Ground, and being called to order by the President, the Hon. C. Dickey, present, Messrs. Wilcox, Sly, Degarmo, Wells, Crippen, Berry, Welsh, Hart, Bayley, Montgomery, and the Secretary.

Mr. Wells offered the following resolution, which was adopted unanimously:

Resolved, That it is inexpedient to make any promise or pledge as to the payment of premiums heretofore awarded or to be awarded at the present exhibition, or for payment of indebtedness of the Society, until the present Fair is closed, and a full showing is had before the Executive Committee as to the financial condition of the Society.

The Committee then adjourned.

MEETING HELD AT MICHIGAN EXCHANGE, DETROIT, OCT. 7, 1859.

The Executive Committee met at the Michigan Exchange, in the city of Detroit, on Friday, Oct. 7, 1859. The President called the meeting to order; present, Messrs. Wilcox, Crippen, Sly, Degarmo, Wells, Bayley, Hart, Berry, Welsh, and the Secretary.

The protest of several breeders of Devon cattle relative to the award made to the herd of John Allen, of Coldwater, was read as follows:

To the Executive Committee of the State Agricultural Society of Michigan:

The undersigned being interested in the raising of Devon cattle, and exhibitors of the same at the Eleventh Annual Exhibition of your Society, believing that the action of the committee appointed to view the same, will be detrimental to the interests of stock raising, would respectfully make the following statement:

Your committee did not make purity of blood a text of merit, as animals known to contain blood foreign to the Devon race, received prizes, while animals of known purity of blood were passed unnoticed. Knowing the same to be here, we would respectfully solicit your honorable body to appoint a new committee, composed of men familiar with the Devon race, and the characteristics thereof, to revise the same.

[Signed] C. H. WILLIAMS, Coldwater,
I. H. BUTTERFIELD, Utica,
LEWIS DRAKE,
OTIS W. BALLARD, Niles,
CALVIN PIERCE, Utica,
W. R. SCHUYLER, Marshall,
M. M. BALLARD, Niles,
C. J. WEST, Elyria, Ohio.

Detroit, Oct. 5, 1859.

Mr. C. H. Williams, of Coldwater, leave being granted, submitted his reasons for offering such protest, and submitted an affidavit relative to the same, made by J. W. Hamlen, of New York.

Mr. Bayley moved that a sub-committee of three be appointed to report on this subject, and to which the above matter be referred for investigation,

And the President appointed as such committee, Messrs. Bayley, Degarmo and Sly.

The following protest of H. M. Wright, upon the awards made in Class 4 of Division B, on mares, was read:

To the officers of the Michigan State Agricultural Society:

Deeming myself aggrieved by the committee on partly thoroughbred mares, I hereby protest against such decision, and for the following reasons:

My mare Highflyer, No. 169, by imported Trustee, was acknowledged by at least one of the committee, (there being only three present,) Mr. Beardsley, I think, to be the best mare on the ground; still, as she had lost her last spring colt, it deprived her of receiving a premium, although she had a yearling colt by her side. Believing that on the merits of the mares, mine was entitled to the first premium, I respectfully submit these facts for your consideration.

H. M. WRIGHT.

Detroit, Oct. 7, 1859.

On motion, protest laid on the table for consideration.

The protest of Findlay McHardy, relative to the awards on Black Hawk stallions, was received and read as follows:

To the Executive Committee of the Michigan State Agricultural Society, for October, 1859:

The undersigned feeling himself aggrieved by the action and determination of the Judges on Class 2, and their departure from the printed regulations of the Society for the year 1859, respectfully appeals to your honorable body for relief, for the reasons that the said Judges were not governed in their determination by the rules and regulations prescribed by the Society for their government, and for the reason that they were governed by considerations of favoritism for owners of stock in their awards of the premiums, rather than for the quality and variety of the stock offered and competing for premiums in said Class.

FINDLAY McHARDY.

On motion of Mr. Wilcox, Mr. McHardy was granted leave to withdraw his protest and submit specific reasons for his disagreement with the decision of the committee.

The protest of A. W. Copeland, relative to the award on cracker machines, was read and referred to the Committee on Business.

The protest of Joseph Black was read as follows:

To the Executive Committee of the State Agricultural Society of the State of Michigan:

The undersigned feeling himself aggrieved by the decision on Class 5, of horses and stallions four years old and over, hereby appeals to the Executive Committee for relief.

JOSEPH BLACK.

Detroit, Oct. 7, 1859.

No reasons being assigned for the appeal and protest, no action was considered necessary, and on motion the protest was laid on the table.

The protest of Messrs. Hamilton and Rising was read as follows:

To the Executive Committee:

SIRS—We, the undersigned, feel that we have not been justly dealt with in regard to the decision on horses for all work. We protest against the same, and ask for a new committee.

ROBERT HAMILTON,
E. W. RISING.

Detroit, Oct. 7, 1859.

On motion, the above protest was laid on the table, no reasons being given for the charge, and no action being considered necessary.

The protest of Mr. John Kellehar, of Marshall, relative to the award made on Ayrshire cattle, was read as follows:

To the President of the Agricultural Society:

SIR—The undersigned feels aggrieved by the action of the committee on Ayrshire stock, and appeals to the judgment of the Executive Committee. The animals compet-

ing against mine, I consider not a full blooded bull, and therefore I claim the first premium.

Yours respectfully,

JOHN KELLEHAR.

Detroit, Oct. 7, 1859.

Ordered that the Secretary notify Mr. Crawford, of Commerce, to file the pedigree of his Ayrshire bull, to which was awarded the first premium, within thirty days of service of notice, for examination by the Executive Committee at its next meeting.

Mr. Wilcox presented specimens of Lapidarian work, by Mr. A. Pohl, of Detroit, cut from stones and minerals, the product of Michigan mines and quarries.

Odered, that a discretionary premium of a diploma be awarded to Mr. A. Pohl.

The attention of the Executive Committee was called to a collection of Paintings by Robert Hopkins, of Detroit, overlooked by the Examining Committee.

On motion of Mr. Wilcox, a diploma and five dollars was awarded to the exhibitor, and the thanks of the Committee be awarded to Mr. R. E. Roberts for calling attention to the same.

The protest of P. G. Johnston, of Greenville, relative to his patent hubs, was read as follows:

To the Executive Committee of the Michigan State Agricultural Society:

The undersigned feeling himself aggrieved by the action of and decision made by the Judges on Division F, domestic manufactures and miscellaneous articles, in not awarding the undersigned a diploma for Sawins' patent buggy hub, as I hold, with many carriage makers, that it is a decided improvement over anything exhibited at this Fair. I therefore appeal to your honorable body for my rights.

R. G. JOHNSTON.

Detroit, Oct. 7, 1859.

Ordered, that the said protest be laid on the table.

The appeal of Thomas Williams from the ruling of the committee on thoroughbred horses, was read as follows:

To the honorable the Executive Committee of the State Agricultural Society:

The undersigned respectfully represents that in accordance with the published premium list, he brought his horse Stone Plover to the Annual Fair, and entered him for a premium, but that said horse was ruled out by the Committee, as the undersigned claims unjustly:

1st. The Committee of Judges made a request that the horse should be moved, which the undersigned complied with as far as it was in his power to do so with safety to himself and his horse; and he is now informed that his horse was ruled out from competition for not complying with the said request.

2d. The undersigned would respectfully represent that the rules of the Society do not require that thoroughbred horses should be moved or shown in motion on the track, or in any way beyond what can be done with safety to the animal shown, and his value as a stock getter.

3d. The undersigned represents that the horse Stone Plover has never been in harness, and has seldom been used since 1853, when he was trained and ran for the Derby stakes of that year, for any other purpose than a stock horse, and that his high mettle and great power require that he should be handled with the utmost care, hence it is that in moving the horse in compliance with the request of the committee, he could not comply with their request further than he did, with safety to the horse, especially when his money value was considered.

4th. The undersigned appeals from the decision of the committee and their ruling, on the ground that the committee ruled out Stone Plover in direct violation of the rules laid down in the premium list, and also of all precedent; and further he is willing to show Stone Plover for what he is, with his colts, as a thoroughbred stock getter,

against either of the other horses shown, and their stock of colts, and abide by the decision of a majority of the Executive Committee as to which animal is the most useful to the stock breeders of Michigan, for a premium of fifty dollars.

And further, the undersigned claims as a member of the State Agricultural Society, that such awards and such rulings are calculated to lower the estimation in which the Society should be held, and to depreciate its efforts to improve the stock of the State, and he therefore appeals from such rulings, and prays that the horses competing may be brought up for examination, and their claims submitted to another committee.

All of which is respectfully submitted.

THOMAS WILLIAMS.

Detroit, Oct. 7, 1859.

Mr. Wilcox offered the following resolution :

Resolved, That the declaration of awards of premiums in the Class for thoroughbred horses, be suspended for the present, and that a committee of three be appointed to take the subject into consideration, and report thereon.

Adopted.

The President appointed Messrs. Wilcox, Crippen and Welsh such committee.

On motion of Mr. Wilcox,

Resolved, That the premium checks already issued for last year and outstanding, be paid by the Treasurer as presented.

On motion,

Resolved, That the payment of the premiums awarded for 1859 be postponed till the next meeting of the Executive Committee, and that all other indebtedness of the Society be paid by the Treasurer as fast as presented.

On motion,

Resolved, That the next meeting of the Executive Committee be held on the 19th December, in Detroit.

A protest on the awards made on butter being presented, it was resolved that the protest be referred to the Business Committee, with power.

Mr. John Starkweather, of Ypsilanti, submitted the following protest:

To the Executive Committee of the Michigan State Agricultural Society:

I hereby enter a protest on awards for trotting brood mares on the following grounds:

1. The rules required colts, instead of colt, to be shown with dam.

2. The mares were not tried on equal footing as regards the qualities which constitute the trotting horse, viz: speed and endurance.

3. Mares were entirely ruled out because they had but one colt.

JOHN STARKWEATHER.

Detroit, Oct. 7, 1859.

On motion, the protest was laid on the table.

On motion,

Resolved, That H. P. Sly, chairman of the committee on the protest relative to awards made on herds of Devon cattle, be authorized to communicate with Sanford Howard, the editor of the Herd Book, relative to the same.

The Executive Committee then adjourned.

R. F. JOHNSTONE,
Secretary.

PROCEEDINGS OF THE EXECUTIVE COMMITTEE,

At its Annual Meeting, held December 19, 1859.

In pursuance of the resolution passed at the meeting of the Executive Committee held October 7, 1859, the following named members met at the Michigan Exchange Hotel, in Detroit, on the 19th December, 1859: Hon. H. G. Wells, Kalamazoo, President; E. N. Wilcox, Detroit; J. B. Crippen, Coldwater; H. P. Sly, Plymouth; F. Fowler, Hillsdale; Horace Welsh, Ypsilanti; A. S. Berry, Adrian, and R. F. Johnstone, Secretary.

The President having called the committee to order, it was ascertained that a quorum was not present, and the Committee adjourned till the evening of the 20th.

—

Dec. 20, 1859, 7 *o'clock P. M.*

The Committee again met, and no quorum being present, no business was transacted.

Mr. Sly asked leave to present a report from the committee to which had been referred the protest of the exhibitors of Devon cattle, and also that the committee might have certain testimony on the subject by E. M. Crippen, Esq., who was then present.

Leave being granted, Mr. Crippen made certain statements, sustained by the written testimony of other parties, which were embodied in the following report by Mr. Sly, and was accepted by the members present:

REPORT ON PROTEST OF EXHIBITORS OF DEVONS.

The committee to which was referred the protest of the breeders of Devon cattle who exhibited at the State Annual Exhibition, respectfully report:

That the protest submitted to them for consideration was duly considered, and that after corresponding with various parties, who also having had the statements and affidavits of several gentlemen acquainted with all the facts of the case before them for comparison, they had arrived at the conclusion that the charge that the committee had awarded the premiums of the Society to animals of impure breeding, was not sustained, and had arisen solely from a mistake made in giving the wrong name to a pure bred animal.

The general charge contained in the protest was, that the herd of Devons exhibited by John Allen, of Coldwater, and to which the premium had been given, originated from a grade cow named Jane Williams, sold by J. W. Hamlin, of New York, to E. M. Crippen, of Coldwater, and alleged afterwards to have been sold by Mr. Crippen to John Allen, the exhibitor. It is true that in 1852, E. M. Crippen did purchase from Mr. Hamlin several head of young stock. These, with one exception, were all pure bred Devons. Amongst these was a heifer named Sophia 2d, by Red Rover, out of Camilla Scott, and a grade heifer named Jane Williams, the exception referred to. Mr. Crippen afterwards sold his stock, and the heifer Sophia was purchased by John Allen, and Jane Williams by the Hon. Geo. A. Coe, who still owns her. At the time and for several years afterwards, Mr. Allen, though knowing the heifer which he purchased to be thoroughbred, actually believed her name to have been Jane Williams, and when Mr. Hamlin was at his place, so informed him, and he entered her as such when she has been heretofore exhibited. This error of name was not corrected till after Jane Williams had been stated by Mr. Hamlin to have been a grade and sold as such to Mr. Crippen. Then Mr. Allen called on Mr. Crippen for the pedigree of the heifer sold to him, and was informed that the name of his heifer was Sophia 2d, and had never been Jane Williams, and that he himself

had misnamed her. Mr. Crippen came before the committee and confirmed this whole statement, and also presented the testimony of Mr. Coe confirming the statement that the grade heifer had been sold to him and was still in his possession.

From this testimony your committee became satisfied that the statement of Mr. Hamlin, on which was based the impression that Jane Williams was the heifer from which had been bred the stock shown by Mr. Allen as thoroughbred, was founded solely on the carelessness of Mr. Allen in not taking care of the pedigree furnished by Mr. Crippen when he purchased Sophia 2d, and was therefore unintentionally incorrect, and that there is full evidence in the statement of Mr. Hamlin and others that the animals exhibited by Mr. Allen are pure Devon blood without attaint. The committee therefore recommend that the awards on Devon herds be sustained.

All of which is respectfully submitted.

H. P. SLY, *Chairman*,
H. E. DEGARMO,
JAMES BAYLEY.

—

Statement of Hon. Geo. A. Coe.

Some five or six years since, Mr. Elliot M. Crippen sold me a grade Devon heifer that he called Jane Williams. I still own the same, and have entered her three times at least, at our County Fair. The same animal has taken premiums at our Fair. At the time I had the heifer of Mr. C. he told me he had her of Mr. Hamlin, and had brought her up the season before.

Respectfully,

GEO. A. COE.

Coldwater, Dec. 12, 1859.

Statement of John Allen.

To the Executive Committee of the Michigan State Agricultural Society, or to whom it may concern:

The undersigned, John Allen, of Coldwater, in the county of Branch, respectfully submits the following statement:

I am the owner of a Devon cow called Sophia 2d, which was entered by me at the Annual Fair of said Society held in Detroit, in October last. I purchased the said cow of Elliot M. Crippen, of Coldwater, about the month of January, A. D. 1853, and before she was one year old. Mr. Crippen informed me that he purchased the said cow (then a calf) of J. W. Hamlin, of West Aurora, Erie county, New York, and that she was a thoroughbred Devon. In the fall of 1858, at the State Fair at Detroit, I saw and had a conversation with the said J. W. Hamlin in which he stated to me, in substance, that he never sold to Elliot M. Crippen, of Coldwater, more than one grade heifer; that he had sold one grade heifer to said Crippen and only one.

The following is a copy of the pedigree of each of the animals in my herd of Devons to which prizes were awarded at the State Fair of 1859:

Pedigree.

1. SOPHIA 2D.—Dropped, April 15, 1852.

Dam, Camilla Scott; g. dam, Victoria; g. g. dam, Sophia; g. g. g. dam, Old Devon, imported by King and Patterson. Sire, Red Rover; sire, Dibble bull, imported.

2. DUCHESS.—Dropped, March, 1854.

Dam, Sophia, as above. Sire, Young Duke; his sire and dam, Old Duke and Duchess, imported.

3. FANCY.—Dropped, June, 1857.

Dam, Rosina; g. dam, Sophia; g. g. dam, imported Devon. Sire, Young Duke, (owned by C. H. Williams, of Coldwater;) g. sire, Old Duke, imported.

4. LADY.—Dropped, April, 1858.

Dam, Sophia, as above. Sire, Allen's Duke; g. sire, Old Duke of Devon, imported.

5. YOUNG FAIRY.—Dropped, June, 1855.

Dam, Fairy; g. dam, Caroline; g. g. dam, Victoria; g. g. g. Fancy, 2d; g. g. g. g. dam, Old Fancy, g. g. g. g. g. dam, a Devon cow, imported from the herd of Hon. Mr. Coke, the Earl of Leicester. Sire, Lord Baltimore; g. sire, Eclipse, imported by Mr. Patterson.

6. YOUNG ZACK.—Dropped, May, 1856.

Dam, Fairy, as above. Sire, Old Zack, he by Lord Western, imported.

7. MAJOR.—Dropped, April 25, 1859.

Dam, Duchess, as above. Sire, Young Duke, (owned by C. H. Williams;) g. sire, Old Duke of Devon, imported.

8. FLORA.—Dropped, May 15, 1859.

Dam, Sophia, as above. Sire, Young Duke, (owned by C. H. Williams,) as above.

The foregoing pedigrees I believe to be correct.

JOHN ALLEN.

STATE OF MICHIGAN, } ss.
County of Branch, }

On this 12th day of December, 1859, before me personally came John Allen, of Coldwater, in said county, and being by me sworn, doth depose and say that the foregoing statement, by him made and subscribed, is true in substance and matter of fact.

DAVID THOMPSON,
Notary Public, Branch Co., Mich.

—

STATE OF MICHIGAN, } ss.
County of Branch, }

Alonzo B. Allen, of said county, being sworn, says in the first person, as follows: In the fall of 1858, I attended the State Fair of the Michigan State Agricultural Society at

Detroit, and while there I saw and conversed with Mr. J. W. Hamlin, of West Aurora, Erie county, N. Y. During the conversation, I inquired of him whether he had sold to Mr. Elliot M. Crippen, of Coldwater, more than one grade heifer, and he said he had not. I am a son of John Allen, of Coldwater, to whose statement this affidavit is is annexed. At the time of this conversation with Hamlin, my father, the said John Allen, was not present. He had left Detroit for his home the day previous to the one on which this conversation occourred.

A. B. ALLEN.

Subscribed and sworn to this 12th day of December, A. D. 1859, before me.

DAVID THOMPSON,
Notary Public, Branch Co., Mich.

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On motion, the report was laid on the table for consideration.

On motion, it was voted that the Committee adjourn to meet on the 16th of January next, and that the Secretary be directed to write to each member requesting his presence at that time.

The Committee adjourned.

R. F. JOHNSTONE,
Secretary.

PROCEEDINGS OF THE EXECUTIVE COMMITTEE,

At the Meeting held Jauuary 16, 1860.

Pursuant to resolution of adjournment adopted at the meeting held December 19, 1859, the Executive Committee of the Michigan State Agricultural Society met at the Exchange Hotel, in Detroit, on Monday, January 16, 1860.

Present, Hon. H. G. Wells, President; J. B. Crippen, James Bayley, H. E. Degarmo, A. S. Berry, H. P. Sly, G. K. Johnson, F. Fowler, H. Welsh, E. N. Wilcox, and R. F. Johnstone, Secretary.

The President called the Committee to order.

On motion, the following order of business was adopted:

1. The presentation of reports of officers.
2. The appointment of standing committees.
3. The premium list.
4. The rules and regulations of the Society.
5. Reports on business before the Committee.
6. Miscellaneous business.
7. Reports from standing or special committees.
8. Designation of time and place for holding the annual exhibition.
9. The appointment of viewing committees.
10. Unfinished business.

The Treasurer submitted the following report:

REPORT OF TREASURER.

MICH. STATE AGRL. SOCIETY TREASURER'S OFFICE,
Ypsilanti, December 31, 1859.

To the officers and members of the Michigan State Agricultural Society:

The Treasurer herewith reports: the receipts into the treasury during the past year have been as follows:

From the State of Michigan, annual appropr'n,.	$2,500 00
From the Annual Fair,.....	6,639 00
From Detroit subscriptions,.....	520 00
Total,.....	$9,659 00

The disbursements have been:

Balance due Treasurer at last annual report,...	$ 96 72
For premium checks of 1858,.....	298 00
For vouchers for expenses of Fairs, 1858 and '59,	9,075 44
Balance in hands of Treasurer,.....	198 84
Total, ...	$9,659 00

Vouchers for foregoing named disbursements are herewith surrendered.

BENJAMIN FOLLETT,
Treasurer.

On motion, the report with accompanying vouchers, were referred to the Business Committee.

REPORT OF THE SECRETARY.

The Secretary submits to the Michigan State Agricultural Society, and its executive officers, the following report for the year ending with December 31, 1859:

The subjects coming within the scope of this report, are:

1. The general business of the Society as transacted by the Business Committee.
2. The Exhibition of 1859, and its expenses.
3. The Exhibition of 1860, and its prospects.
4. The Transactions and their publication.

For the report for the year 1858, submitted to the Executive Committee, the gradual growth of the debt of the Society was traced from year to year since its organization, and at the time that report was made, the known debt of the Society was fixed at $2,767 75. But the oustanding accounts and balance unpaid, made the debt of the Society

on the 30th of September, 1859, amount altogether to the following:

Balance of unpaid premiums of 1857 and 1858,.	$293 00
" due Treasurer for advances,.....	96 72
" with interest due Brooks, Adams & Co.,	1,132 00
Note with interest due at Savings' Bank,.....	1,082 49
Balances and accounts outstanding,.....	889 08
Due Secretary for salary for one year and half, ending July 17,.....	900 00
Total.....	$4,393 89

A detailed statement of the items composing the above account is submitted with the report. With the exception of the salary of the Secretary, and a few minor items, the whole of this indebtedness has been paid.

The expenses of the Society for this year, up to the first of January, 1860, is herewith submitted in detail, showing the nature of such expenditure and the name of the party to whom the debt became.

1. Rent of grounds,.....		$300 00
2. Rent of Secretary's office to August 1, 1859,.		30 00
3. Buildings and structures by Brooks & Cockle,		2,040 00
4. Construction of grand stand, ...		350 00
5. Printing and advertising:		
The Tribune, printing cards, labels, &c.,	$127 50	
The Free Press, printing large and small posters,.....	121 30	
The Advertiser, printing premium lists and orders of the day,.....	131 75	
To Michigan Farmer, advertisement of premium list and programme, and circulation of same,.....	75 00	
		455 55
6. Secretary's expenses:		
Postage and stamps,.....	$36 19	
Telegraph expenses,.....	4 78	

Palmer & French, stationery,.....	$33 12		
Francis Raymond, "	1 50		
H. J. Alford, 3 weeks services Ass't Sec.,	30 00		
H. Fowler, for 4 days " "	8 00		
E. H. Uhl, 5 days " "	10 00		
R. H. Finley, 5 days " "	10 00		
Jas. H. Nelson, 4½ days " "	9 00		
W. Wallace, 5 days " "	10 00		
M.H. Goodrich, 4 days " "	8 00		
C. Ockford, 6 days " "	12 00		
M. Dickinson, 4 days " "	8 00		
G.A.VanDyke, 4 days " "	8 00		
G. G. Torrey, 5 days " "	10 00		
Candles and lights,.....	75		
Express charges on books from Washington, ...	1 25		
Freight on reports from Lansing,.....	5 63		
Drayage of books to and from Fair Ground and carriage hire of clerks,..	4 50		
			$210 72
7. E. Jerome, furnishing water during Fair and for casks and sinking the same,.....			132 33
8. Wright & Welsh, for 1204 meal tickets at 25c,			300 00
9. Charles Grant, for music for 3 days,.	$75 00		
Detroit Light Guard Band, 1½ days,....	47 00		
Mayflower Band,.....	16 00		
Stern & Buchiester, music in Floral Hall,	6 00		
			144 00
10. Hay, straw and feed :			
J. S. Rose, 9 tons Roman hay at $8 00,.	$72 00		
Joseph Thereman, timothy hay and straw for stables,.....	230 00		
Patrick Breman, 10½ tons timothy hay at $15 00, ...	154 00		
H. B. Smith, two loads of hay,.....	26 60		
David Brown, one load of hay,.....	11 28		

W. S. Penfield, hay per order H. P. Sly,	$13 50	
Garrison & Towne, feed and grain on Fair Ground,	25 90	
		$533 28
11. Night watch during Fair:		
Thomas McCarty, 4 nights,	$ 8 00	
John Bort, 4 nights,	8 00	
David Peters, 4 nights,	8 00	
John Bizarre, 7 nights and one day,	15 00	
Gabriel Borreau, 3 nights,	6 00	
John Lechtenberg, 4 nights,	8 00	
Jacob Muhlman, 3 nights,	6 00	
Arthur Proctor, 1 night	2 00	
Harry Ryan, 4 nights,	8 00	
Henry A. Watkins, 4 nights and 1 day,	9 50	
Thomas Hardy, 4 nights,	8 00	
M. Doran, 4 nights,	8 00	
John Boyd, 5 nights,	10 00	
J. McMichael, 4 nights,	8 00	
Thomas Cochran, 4 nights,	8 00	
Silas H. Wood, 5 nights,	10 00	
Mr. Trembly, 4 nights,	8 00	
August Schlegel, 3 nights,	6 00	
George Blakeslee, chief,	12 00	
J. J. Chatfield, 5 nights,	10 00	
D. B. Chatfield, 5 nights,	10 00	
Chauncey Clark, 4 nights,	8 00	
John Allen, 4 nights and 4 days,	16 00	
Jacob Christie, 3 nights,	6 00	
James Fitzpatrick, 4 nights and 4 days,	14 00	
		220 50
12. Day watch during Fair:		
Charles T. Allen, chief, 4 days,	$8 00	
Frederick Stevens, 5 days,	7 50	
H. Gadwa, 5 days,	7 50	
Edward Davis, 4 days,	6 00	
Thomas Finn, 4 days,	6 00	

Silas A. Wood, 6 days,.....	$9 00	
John Kelly, 4 days,.....	6 00	
William Casterton, 4 days,.....	6 00	
Dan. O'Callighan, 4 days, ...	6 00	
James F. Fielding, 4 days, ...	6 00	
Geo. W. Holmes, 4 days, ...	6 00	
John Long, 4 days,.....	6 00	
William Kelly, 1½ days,.....	2 25	
Alfred Upton, 4 days, ...	6 00	
Dennis Durn, 4 days,.....	6 00	
Leon Laplear, 4 days,.....	6 00	
Dennes Lannigan, 4 days,.....	6 00	
		$106 25
13. Gate keepers:		
John Wilkinson, door keeper at President's stand,.....	$ 6 00	
J. A. Swan, gate keeper at gate No. 2,..	10 00	
H. A. Covert, gate keeper at carriage exit,	8 00	
John Kendall, " at carriage entrance,	8 00	
W. W. Howland, gate keeper at gate No. 2,.....	10 00	
W. A. Nelson, gate keeper at principal entrance,.....	10 00	
Geo. A. Carter, gate keeper at amphitheatre,.....	6 00	
Geo. Carter, gate keeper, amphiteatre,.	5 50	
Wm. Henry, gate keeper, exit gate,....	8 00	
Jas. Harding, gate keeper, main entrance,	8 00	
James Ayres, " " "	8 00	
Daniel Pierce, " " "	8 00	
J. D. Bennett, " grand stand,..	4 00	
W. Welsh, gate keeper, main entrance,.	8 00	
Alton Welsh, " " "	8 00	
Expenses of gate keepers certified by H. Welsh, ...	22 50	
		138 00

14. Superintendents and Assistants:

J. W. Swar, supt. in Mechanics' Hall,...	$20 00	
Willis Jones, sweeper,.....	3 50	
John Teller, ticket seller at grand stand,	4 50	
William Livingston, messenger for Secretary and stamping cards,.....	9 80	
T. T. Lyon, supt. fruit department,....	20 00	
S. B. King, assistant in domestic hall,..	8 00	
J. McMichael & Son, carpenter jobs,...	21 87	
John F. Cooper, assistant in floral hall,.	6 00	
Mrs. Carter, matron at ladies' saloon,...	8 00	
E. L. Drake, supt. domestic hall, ...	12 00	
Samuel Ackley, assistant domestic hall,.	7 50	
Asa Thompson, " " " .	7 50	
Chauncey French, " " " .	2 25	
Jesse French, supt. of sheep and swine,	10 00	
H. B. Smith, supt. of horses and stables,	10 00	
S. Bowerman, supt. agricultural hall,...	10 00	
James Collier, assistant in floral hall,...	8 00	
N. E. Welsh, supt. in domestic hall,....	8 00	
J. B. Farnsworth, assistant in agrl. hall,	8 00	
Mr. Merritt, supt. of poultry,.....	8 00	
David Brown, supt. of cattle and hay,..	8 00	
Harvey Green, assistant at President's stand and at grand stand,.....	11 78	
H. V. Knapp, assistant in domestic hall,	10 00	
W. T. Johnson, assistant at grand stand,	2 00	
Chas. Betts, supt. of implements,.....	15 00	
J. A. Girardin, assistant in floral hall,..	7 50	
		$246 70

15. Decoration of Halls and preparation of Grounds:

J. Hutchins & Co., freight on evergreens,	$57 05	
John Swigard, saw dust,.....	20 00	
James Burns, cloth and calico,.....	9 31	
E. St. Alary, for services and pay of workmen, girls and materials in floral hall,.....	213 69	

Pierre Jarret, for services and pay of men in preparation of halls and stands,		$93 35	
Amabile Zani, for use of plaster casts and work,		16 00	
N. Trucky, painting signs,		5 25	
T. Barron, for evergreens,	$15 00		
Alfred Stuart, "	14 00		
H. S. Potter, "	9 00		
H. J. Alvord, "	6 25		
		44 25	
W. H. Teft, hardware,		1 94	
G. H. Hodges, white washing buildings,		30 00	
Augustus Day, for services and men for steam engine,		45 91	
G. N. Bower, spring wagon for carrying of stationery, &c.,		9 00	
Godfrey, Dean & Laible, for mottoes, signs for floral hall,		14 50	
H. H. Wright, for 4 barrels of tar,		19 00	
H. L. Newberry, wood for use of steam plow,		4 00	
Town, Smith & Sheldon, for ribbons for badges,		35 01	
C. Dumbler, cartage of pig iron,		6 00	
G. G. Tony, 7 days work in preparing grounds,		7 00	
J. McMichael, securing buildings and lumber after the exhibition,		34 87	
H. H. Wright, 1 dozen pails,		2 00	
N. Rosseau, for rigging flagstaff,		5 00	
G. Carter, for programmes,		1 50	
Hoffman & McBride, for rigging flagstaffs, fitting up signs, &c.,		17 33	
Dennis Dunn, cartage,		5 00	
			$689 23
16. Marshals and their Horses:			
Byron Green, 21 days with horse,		$12 50	

D. Freeman, 3 days, horse 2 days,.....	$12 00	
F. Freyerburgher, 3 days, horse 2 days,	11 50	
Peter Gadwa, 2 days, horse 2 days,.....	10 00	
S. S. Burrows, 4 days, horse 4 days,....	20 00	
F. X. Cicotte, 4 days, horse 4 days,....	20 00	
R. M. Chittenden, 4 days, horse 4 days,.	20 00	
George Nesbitt, 4 days, horse 4 days,...	20 00	
George Niles, 4 days, horse 4 days,.....	20 00	
H. Metz, 4 days, horse 4 days,.....	20 00	
Wm. Cedle, 2 days, with horse part of the time,.....	5 00	
Wm. Haley, 2½ days, horse 2 days,.....	11 00	
D. K. Sullivan, 3 days, with horse part of the time,.....	7 50	
J. A. Gunning, 3 days, horse 3 days,...	15 00	
Wm. Haynes, 2 days,.....	5 00	
E. S. Leadbeater, 4 days, horse 4 days, amphitheatre,.....	20 00	
J. S. Blodgett, officer at grand stand, 3 days,.....	6 00	
A. Y. Young, officer at grand stand, 3 days,.....	6 00	
S. D. Weaver, officer at grand stand, 3½ days,.....	7 00	
		$248 50

17. Miscellaneous Expenses:

B. Vernon, insurance on buildings,.....	$45 90	
John Kent, hack hire for Ex. Com.,....	12 00	
P. J. Sullivan, horses for use of Ex. Com.,	10 00	
H. Corville, for posting bills,.....	12 50	
G. W. Howe, for livery for use of committees,.....	37 00	
E. Williams, carriage hire,.....	5 00	
J. Parkison, "	2 00	
J. Sullivan, hack hire,.....	2 00	
Cash, cartage,.....	50	

Cash, sheeting and pole for sign,.....	$0 56	
H. Welsh, expenses Business Com'tee,..	17 50	
Cash, expenses of Secretary's office,....	7 50	
		$154 46
18. Expenses of Treasurer's office,.....		153 89
19. Salary of Secretary from July 17 to January 17, 1860,.....		300 00
Total of expenses and accounts rendered to January, 1860,.....		$6,762 01

On the first of January, the old accounts and balances of 1858, with the exception of a portion of the Secretary's salary and the whole of the above with the exception of the salary of the Secretary, and $1,000 due to Messrs. Brooks & Cockle for balance due on building, had been paid; also warrants to the amount of $84 12.

The amount outstanding due on the accounts are therefore as follows:

To Messrs. Brooks & Cockle, warrant No. 80,...	$1,000 00
To Secretary on warrant No. 120,.....	182 13
To " " " No. 121,.....	465 00
To warrants 90, 111 and 112,.....	84 12
Total,.....	$1,731 25

The Premium List offered by the Society for the exhibition of 1859, amounted in all to $4,369 00 in cash, together with the cost of sundry medals, diplomas, silver cups, of which it was not possible to compute the precise value. The amount of the premiums offered in the several divisions with the actual awards, are thus compared:

	Premiums offered.	Awards made.
For cattle,.....	$1,096 00.....	$948 00
" horses,.....	981 00.....	846 00
" sheep and swine,.....	634 00.....	444 00
" farm implements,.....	425 00.....	235 00
" dairy and household ware,	117 00.....	66 00

For domestic manufactures,..	$241 00.....	$171 00
" fine arts,.....	166 00.....	95 00
" fruits, flowers, vegetables,	372 00.....	187 00
" grain, flour and seed.....	82 00.....	29 00
" essays, ...	255 00.....	none.
Total,.....	$4,369 00	$3,021 00

The amount of awards are thus divided amongst the several classes:

1. Cattle:		
Short Horns, ...	$219 00	
Devons,.....	237 00	
Herefords,.....	136 00	
Ayrshires, ...	24 00	
Herds of cattle,.....	70 00	
Cross bloods,.....	36 00	
Grades and natives,.....	59 00	
Working oxen,.....	35 00	
Steers,.....	57 00	
Fat cattle, ...	45 00	
Milch cows, ...	30 00	
		$948 00
2. Horses:		
All work,.....	$171 00	
Black Hawks and Morgans,.....	115 00	
Half bred, ...	80 00	
Draught,.....	105 00	
Trotting stock,.....	235 00	
Stable of colts, ...	25 00	
Matched horses,.....	80 00	
Jacks and mules,.....	35 00	
		846 00
3. Sheep, Swine and Poultry:		
Spanish merinoes,.....	$78 00	
French merinoes,.....	64 00	
Saxon and Silesian,.....	73 00	
Southdowns, ...	82 00	

Leicesters and Cotswolds,.....	$57 00	
Swine,.....	57 00	
Poultry,.....	33 00	
		$444 00
4. Farm Implements:		
Class 1,.....	$60 00	
Class 2,.....	58 00	
Class 3,.....	79 00	
Class 4,.....	26 00	
Class 5,.....	12 00	
		235 00
Household and dairy articles,.....		66 00
5. Domestic manufactures:		
Home made,.....	$72 00	
Factory made,.....	23 00	
Articles of furniture,.....	21 00	
Articles of dress, ...	14 00	
Articles of leather,.....	9 00	
Carriages and buggies,.....	26 00	
Miscellaneous articles,.....	6 00	
		171 00
6. Fine Arts:		
Painting and statuary,.....	$50 00	
Needle work, &c.,.....	45 00	
		95 00
7. Fruits, Flowers, &c.:		
Flowers, ...	$28 00	
Amateur fruits,.....	77 00	
Professional fruits,.....	37 00	
Vegetables, ...	45 00	
		187 00
8. Grain, flour and seeds,.....		29 09
9. Diplomas, ...		26 66
Total,.....		$3,047 66

In addition to the above are a few premiums to be awarded at the present meeting of the Executive Commit-

tee, not yet declared, and the cost of the medals and silver ware, that may swell the amount $200 more.

If we place all the indebtedness, expenses and premiums together, the sum will show the whole amount of liabilities for the year 1859, up to December 31, to be as follows:

Debt and balances of previous years,.....	$4,393 89
Expenses of 1859, as per schedule above,.....	6,762 01
Premiums awarded up to January 1, 1860,....	3,047 66
Total liabilities, ...	$14,203 56

The total income of the Society for the past year has been as follows:

Receipts from Detroit subscription to December 31, 1859,.....	$ 520 00	
Receipts from annual exhibition,....	6,639 00	
Annual appropriation by the State,.	2,500 00	
		9,659 00
Leaving a balance to be provided for of....		$4,544 56
To which is to be added for discretionary premiums of 1858, cost of medals, and silver ware, not above included, ...		125 00
Total balance to be provided for,.....		$4,669 56

It will be seen from the above that the Society is in debt, but against this debt it has a large amount of property, consisting of the buildings, fixtures, apparatus necessary to carry on its future exhibitions with a very inconsiderable outlay in comparison with what has been the case in previous years. This property is valued at $5,600, and probably could not be replaced for that amount. The lumber alone used in the buildings amounts to over three hundred thousand feet, and will give some adequate idea of the value of the buildings to the Society as they now stand. This and last year are the first in which the Society has possessed property equal to all its liabilities.

During the early part of the year, the late H. R. An-

drews, Esq., became the proprietor of the lease of the grounds on which the Fair was held in 1858. Under this lease, the Society holds its tenure. At the same time he also became the lessee of grounds immediately adjoining the Fair grounds, and during the summer made both lots into one park, with a track of a mile in length. This alteration of the grounds entailed upon the Society the necessity of making changes in the plan of their buildings, especially as the new track had cut the location of their last year's stables in two. Very shortly after arrangements were closed with Mr. Andrews on a basis agreed upon, his decease occurred, and the estate fell into the hands of his executors. These gentlemen, however, carried out in the most liberal manner the agreement with Mr. Andrews. The lease of the grounds is now in the possession of Messrs. Wright & Welsh.

Besides the outlay for increased room and accommodation in the buildings, these large grounds required the services of a greater number of men, and increased expenditure for water, and fixtures to contain it. These with the high price of hay, swelled the expenses of the last Fair, to a large amount, as well as the desire to render the Fair attractive and safe for all.

The change from the family ticket arrangement to that of single tickets, it was threatened, would be the means of diminishing the receipts; and hence it was deemed of the utmost consequence to render the exhibition as attractive as possible. This was done, and the successful result of the change affords the best and most satisfactory answer to all doubts as to the wisdom of the measure.

That the exhibition itself is growing in importance to the agricultural and mechanical interests of the State, the entries bear ample testimony, and the opening of the Premium List to competition by stock breeders of other States seems to have met with a fair response from them. Many parties from Canada, from Ohio, and from New York, took

the opportunity thus afforded to exhibit their cattle, sheep, horses and swine.

The entries in the several divisions are as follows:

Cattle,	215
Horses,	342
Sheep, Swine and Poultry,	225
Farm Implements,	221
Dairy and household manufactures,	94
Domestic manufactures,	342
Fine arts and needlework,	194
Flowers, fruits and vegetables,	555
Grain, flour and seeds,	84
Miscellaneous articles,	63
Field crops and draining,	5
Total,	2340

At no previous exhibition has there been evinced more emulation and spirit than was seen amongst the exhibitors; and from the fact that not only are there new importations of improved stock being made, but also, herds and stables of young stock being raised in the State, we may look for a sharper competition in the future than even prevails at present.

The possession of buildings and fixtures will of course curtail in a large degree the expenditures of the Society for the next year, and on a comparison of the list of expenses, it is believed that an estimate of outlay may be made as follows, which will not be far from the actual results:

Rent of grounds,	$300 00
Buildings and fixtures,	500 00
Printing and advertising,	450 00
Secretary's office for assistants and stationery,	164 00
Water for grounds,	75 00
Hay and straw,	850 00

Music,	$75 00
Night watch,	200 00
Day watch,	106 00
Superintendents and gate keepers,	375 00
Marshals,	150 00
Decoration of halls,	300 00
Miscellaneous expenses,	300 00
Feed for stock,	25 00
Total,	$3,265 00

It will be seen from this that the expenses are reduced one-half. In the article of hay alone, the expenses of 1859 was double that of 1858, from the fact that the article cost $15 to $16 per ton, instead of $6 as in 1858. Other expenses may be reduced somewhat, but the chief saving, it will be seen, is in the buildings, and in making no provisions for meals for visitors or committees. Should the exhibition of 1860 prove as successful as that of the past year, the Society will not only be almost out of debt, but in possession of property of considerable value to it. It is therefore important that every exertion should be made to render the next exhibition as attractive as possible, and it is believed it may be as fully successful as that of last year.

The volume of Transactions for 1858 is now in press, and will be issued within a very short space of time. It has been delayed with the design of rendering it useful as a record of the Devon stock of the State. Amongst the useful articles which will appear in it, will be a very excellent treatise on the Devon cattle prepared by T. S. Ballard, Esq., of Niles.

During the fall of the year 1858, Messrs. T. T. Lyon, of Plymouth, and S. O. Knapp, of Jackson, delegates from this Society, attended the biennial Convention of the American

Pomological Association, and a report of that meeting has been prepared, which will appear in the Transactions.

All of which is respectfully submitted.

R. F. JOHNSTONE,
Secretary.

On motion, the report was referred to the Committee on Finance.

On motion of Mr. Crippen, the President was authorized to appoint the following Standing Committees, to consist of three members each, viz: a Committee on Finance, a Committee on Rules and Regulations, a Committee on Premium List, and a general Business Committee:

The President announced as such Committees, the following:

Finance—J. B. Crippen, E. N. Wilcox and A. S. Berry.

Rules and Regulations—H. E. Degarmo, J. Bayley and G. K. Johnson.

Premium List—H. Welsh, H. P. Sly and Frederick Fowler.

On motion of Mr. Bayley, the subject of the awards on cross bloods at the State Fair, was taken up for consideration, Mr. Bayley having been informed on good authority that the cattle to which the awards had been made did not fulfill the requisitions of the Society, and that the committee had disagreed in relation to a concurrence on them.

On motion the subject was referred to a committee consisting of Mr. Bayley, Mr. Degarmo and Mr. Sly, with power to make a report which shall be final.

On motion, the Secretary was instructed to notify Mr. C. W. Green, of Farmington, that he would be required to show to the Executive Committee his proof of the descent of the cross blood cattle on which he had been awarded certain premiums at the late State Fair.

The Standing Committees then retired, and the Executive Committee adjourned to meet at 7 o'clock P. M.

January 17, 7 *o'clock P. M.*

The Committee met.

Mr. Welsh reported that the Committee on the Premium List had gone through with the list of last year, and made sundry alterations in the same, and begged leave to submit their report.

Leave being granted, Mr. Welsh submitted his report, which was taken up in the order of the several classes, and, the alterations being read, the whole was taken up for consideration.

Division A, Cattle.—The Committee recommended that no third premiums be adopted in the several classes of thoroughbred cattle.

Adopted.

The Committee recommended that no class should be made for cross blood cattle.

Adopted.

The Committee recommended that no premiums on any five yoke of oxen be offered.

Adopted.

On motion of Mr. Crippen, the report of the Committee was so amended that the premiums offered on working oxen should be fixed respectively at $20 for the first premium, $15 for the second premium, and $10 for the third premium.

The following letter from M. Heydenburk, relative to forming a list of premiums for milch cows, was presented by the President, and read as follows:

KALAMAZOO, Dec. 17, 1859.

HON. H. G. WELLS, *President:*

SIR—The suggestions in regard to premiums on dairy cows which you requested me to hand you in writing, I have barely time to respond to in the following hasty manner:

1. The time hitherto required for the trial has been too long. Six days are as good as ten for such a trial. It re-

quires time and work to weigh or measure the milk from any one cow, in a dairy, keep it separate from other milk, and note down a record of it with regularity; and no family who conscientiously regards the Sabbath will be likely to do such work on that day; therefore some of our best dairymen would not be represented, as ten consecutive days would require proceedings to which they would not conform.

2. The restrictions heretofore adopted in regard to feed is another difficulty. No one who gives his cows extra feed will be likely to restrict them for such a trial at any season, and hence many of the best cows which should compete, will not do so with such restrictions.

3. Requiring all the product of the two separate trials to be exhibited, is likely to be attended with so much inconvenience to the exhibitor, so little advantage to the exhibition, that I think it should be modified. A sample should always be exhibited, and that is sufficient for all purposes for which the trial is made. The sample, however, should be of a given amount of milk, the produce of certain number of milkings under the ordinary circumstances in which the cow is kept.

4. The formality of an oath might prevent some from competing who would add much to the exhibition in that department. A certificate accompanying the statement of facts, with such other reasonable confirmations of the evidence as the judges might require, would probably prove perfectly satisfactory to all interested.

Yours, in haste,

M. HEYDENBURK.

On motion of Mr. Welsh, the Secretary was directed to embody in the Premium List such of these suggestions as might be suitable for adoption by the Society.

Division B, Horses.—The Committee reported that after due consideration they had concluded to recommend that

all premiums for sucking colts in each of the classes, be stricken out.

Adopted.

The premiums on horses for all work, on Black Hawks and Morgans, on thoroughbreds, were adopted as they stood last year, with the above amendment.

The Committee reported that they had struck out the class of premiums on "horses partly thoroughbred."

Mr. Wilcox moved that the report be amended by the the adoption of the class as it had been reported and adopted last year. There could be no question about the benefits resulting from an infusion of thoroughbred blood into the stock breeding of the State. In every class, as every man who breeds horses very well knew, the horse or mare was prized the more for having an infusion of good blood in its viens; and every roadster, Black Hawk, Morgan, or horse of all work, was deemed of higher quality and had actually proved to be more serviceable whether used as a work horse or a driving horse, whether on the road or the track, when it was known to be descended from thoroughbred ancestry. As for a high class of carriage horses, which combine style with action, smoothness of limb and beauty, he believed it impossible to have them without having resource to the blood horse. It was the duty of the Society, as he conceived, to encourage the introduction of such horses for breeding purposes, and to exert its influence to guide in the selection of the right breed, such as would prove useful in elevating the standard of stock in the State. By striking out or ignoring the efforts of breeders in this direction, the Society was not exercising one of its legitimate duties—duties which pertained to it particularly, and which were calculated to do much good if attended to. Throw aside all control over the introduction of half-bred stock, and we deprive the State of that legitimate and elevated standard which it should belong to this Society to establish. The other

classes of premiums established in Division B, do not cover this ground—do not reach it, and the prejudices of community in favor of horse speed, leads to a forgetfulness of the fact that there may be improvements made in our stock of horses irrespective of their driving qualities before a skeleton wagon or the lightest kind of a sulkey. With these views, he would respectfully move that the class be restored.

The motion was adopted.

The Committee reported that no premiums had been offered on draught horses under two years old.

Adopted.

The Committee reported that in the class of trotting stock no premiums had been offered on stallions of one year old, nor mares of two years or under.

Adopted.

On motion, the report of the Committee was amended so that the rule with regard to the stables of colts and their age, shall read as follows:

"For the government of entries for the premiums on stables of colts, the Executive Committee have established the rule that the term 'colts,' as used in this class shall mean all progeny from stallions that has not completed its fourth year, or has net reached the completion of sixty months."

Adopted.

On motion of Mr. Crippen,

Resolved, That there be established a class of premiums for walking horses, the standard for such class to provide that the horses entered shall not be less than fifteen and half hands in height, and shall weigh not less than 1000 pounds. The premiums to be as follows:

Best single horse, gelding or mare not less than 15½ hands high, nor less than 1000 pounds weight, 1st premium,.....$10 00

Second best single horse, gelding or mare, 2d prm., 6 00

Best pair of matched working horses not less than 15½ hands high nor 1000 pounds weight, 1st premium,.....$10 00
Second best do., 2d premium,..... 6 00

On motion of Mr. Berry, the report was amended so that a class of premiums be offered on jacks and mules, as follows:

Best Spanish or Maltese jack, not less than thirteen hands in height, which has been kept in the State for service not less than three months previous to the exhibition, and has been proved a good stock getter, 1st premium,.....$12 00
Second best do., 2d premium,..... 10 00
Best young jack not less than one year nor more than 3 years old, bred in Michigan,..... 8 00
Best jenny, with foal at her side, 1st premium,.... 10 00
Second best do., 2d premium,..... ..... 8 00
Best pair of aged mules, 1st premium,..... 12 00
Second best do., 2d premium,..... 8 00
Best show of young mules, taking number and quality into consideration, bred from one jack, not less than five in number of any age,..... 20 00

Division C, Sheep, Swine and Poultry.—The Committee recommend that there be but one class of Merino or pure blood stock established, and that there should be but one class of long wooled sheep under the designation of mutton sheep.

Mr. Crippen moved to amend the report by dividing the Merino sheep into two classes which should respectively include,

1. The Spanish and French merinos and their grades.
2. The Saxon and Silesian and their grades.

The amendment was adopted.

Mr. Crippen moved to amend the report by establishing a class of long wooled sheep that should include the Leicesters and Cotswolds, and sheep of that class, and that

the Southdowns or middle wooled sheep should be put in a class by themselves.

Not agreed to.

And on motion, the report of the Committee, as amended, was adopted.

The report of the Committee on swine was adopted. All premiums on grades or cross bloods being stricken out.

The report of the Committee on poultry was adopted.

Division D, Farm Implements.—The report of the Committee recommended adoption of list of last year with a slight modification as to the graduation of the premiums.

On motion of Mr. Wilcox, a premium of $5 was offered for the exhibition of the best tile making machine.

Division E, Dairy and Household Manufactures.—The Committee reported that the list of last year was adopted.

Division F, Domestic Manufactures.—Committee reported list of last year.

On motion of Mr. Berry, a class for locomotives and rolling stock was adopted, and made Class 7, of Division F.

The report on Division G, was adopted without amendment.

The report on Division H, was adopted, with sundry amendments, which the Secretary was directed to embody in the Premium List.

The report on Division K, was adopted.

Mr. G. K. Johnson moved that the following addition be made to the class, viz:

For the best specimen of salt, not less than 50 lbs., the manufacture of this State, a diploma and.... $5 00

For the best collection of articles of ornament, made from gypsum, the produce of quarries in this State, a diploma and 5 00

For the best ornamental work of marble from quarries in this State, diploma and..... 5 00

The amendment was adopted.

The Committee report on Division L, that they have raised the value of the premiums to $10, and have struck out all second premiums heretofore offered. They recommend also that stringent rules be adopted, requiring competitors to report with accuracy the information required by the regulations. All other premiums in this class to remain as they were offered last year.

On motion of Mr. Wilcox, the report as amended, was adopted, and the Secretary was directed to have it published in the Michigan Farmer at an early date.

Mr. Wilcox moved that a rule be adopted for the government of the Society which shall open the competition at the exhibition of 1860 to exhibitors from other States.

Mr. Sly moved to amend the motion by the recommendation that a class be opened for foreign live stock.

Mr. Berry moved that the motion and amendment be laid on the table for the present, and that the report on Rules and Regulations be now received.

Adopted.

Mr. Degarmo, from the Committee on Rules and Regulations, reported that the Committee had gone through with the rules of last year, and made sundry amendments to the same, which were respectfully submitted.

On motion of Mr. Wilcox, the motion and amendment relative to opening competition to foreign exhibitors, was now taken up.

The question recurring on the amendment submitted by Mr. Sly, it was decided in the negative.

The question being on the adoption of the rule which prevailed last year, it was adopted.

The report recommended the adoption of the following rule:

"All exhibitors of cattle and horses shall be required to pay an entry fee of fifty cents upon each animal entered for exhibition or competition, in addition to the first animal entered."

Adopted.

Mr. Crippen moved to amend the report by the adoption of the following rules in place of those which were in operation last year:

"All persons acting as members of the Viewing Committees, or as Judges, will be presented with special tickets of admission to the grounds, on reporting themselves at the office of the President, and entering their names on the Committee book.

"Each exhibitor will be presented with an exhibitor's ticket, and each of their attendants with an attendant's ticket, on application at the office of the Secretary. These tickets will be taken up by the gate keeper each time that the exhibitor or his attendant enters the grounds, and a check given. On leaving the grounds, the admission ticket will be returned on presentation of check."

The above rules were adopted.

The Committee then adjourned till to-morrow morning at 8 o'clock.

—

Wednesday, January 18, 1860.

The Committee met.

Mr. Welsh moved that the report of the Premium List on horses be again taken up, for the purpose of reconsidering the premiums offered in the class of horses partly thoroughbred.

Laid on the table till afternoon session.

The Committee then took up the report of the Committee on Rules and Regulations.

The President stated that Mr. T. T. Lyon was present, and would like to submit some suggestions relative to the fruit department and its management, so as to render it as beneficial as possible to the fruit growing interest.

On motion,

Resolved, That Mr. Lyon be requested to draw up and

submit to the Secretary a series of instructions for the Fruit Committees, and that the Secretary is authorized to embody such of them in the Premium List as may be found applicable to the designs of the Society.

Mr. Lyon accordingly submitted the following:

1. That a Pomological Committee should be appointed, with a general charge of the nomenclature of the fruits presented for competition.

2. All fruits, flowers, plants and vegetables offered in competition for premiums must be grown by the competitor, (except in the case of seedlings as hereinafter provided.)

3. Articles receiving a premium in one class class cannot compete in another, except in case of entire collections as provided in class.

4. Judges may in any case withhold premiums where articles of sufficient merit are not offered, and no premium shall be awarded for a seedling, except when accompanied by a concise history and description of both tree and fruit, and when such seedling shall prove at least equal in value to any other variety of the same season.

5. Premiums for seedlings may be awarded to others when the original producer may fail to compete for them.

6. It shall be the duty of the Pomological Committee to take charge of the fruits offered for exhibition so far as to correct all erroneous entries, and also to correct any and all errors of nomenclature, affixing a mark of doubtfulness when uncertain.

7. It is not the purpose of the Society to encourage the cultivation of random or unknown varieties of fruit; therefore, when a premium is dependent upon the number of varieties named, varieties only shall be counted.

8. Lots of fruits competing for distinct premiums must be arranged in distinct groups upon the tables.

Mr. Wilcox moved that a sweepstakes premium on fruits be offered, to be awarded for the best collection of all fruits shown by any one person.

After discussion, Mr. Crippen submitted the following resolution:

Resolved, That the sweepstake premium for the best collection of fruits be adopted, and that the premium be fixed at $10; and that the Pomological Committee shall have in charge the following subjects:

1. The nomenclature of all fruits entered for competition or exhibition.

2. The awards of premiums on seedlings.

3. The award of premiums on the best collection of fruits.

The resolution was adopted, and the Secretary directed to embody the same in the Premium List.

Mr. Welsh moved that the rule opening the Premium List to foreign competition, be reconsidered.

The motion was lost.

A motion was made that the report of the Committee on the Rules and Regulations be adopted, which was agreed to.

Mr. Bayley submitted the following resolutions:

Whereas, The Superintendent of Public Instruction has submitted a report on the course of study, &c., practiced at the State Agricultural College, which report has been adopted by the Board of Education as the basis for an entire reorganization of the course of study and practice at that institution; and,

Whereas, From the necessarily experimental character of the entire project and the deep stake that the agriculturists of the State have in its success, it is especially open to inquiry on the part of the Board; therefore,

Resolved, That a committee of three be appointed to take into consideration this whole subject, and also the propriety of memorializing the Legislature in favor of so amending the present law as to provide for placing the institution under the charge of a State Board of Agriculture, expressly appointed for that purpose.

The resolutions were adopted, and the President ap-

pointed Messrs. Bayley, of Troy, Johnson, of Grand Rapids, and Fowler, of Hillsdale, as such committee, to report at the next meeting of the Executive Committee.

Mr. Wilcox read the following letter from Mr. John Starkweather, of Ypsilanti, relative to the premiums on trotting horses:

HORACE WELSH, Esq., *one of the Committee of the Michigan State Agricultural Society:*

MY DEAR SIR—Allow me to present for your consideration, and for the Committee, an alteration in the rules regarding trotting stock so as to read "colt or colts," instead of "colts," and that five years of age be the lowest brood mare, compelled to show speed with colt by her side, and that four years old be allowed a class by themselves. It is well known that a mare four years old with a colt by her side, however fast she may be as a trotter, would have no sight for a premium were she compelled to show her speed in this condition; hence a variation would be as necessary as though she were from the heats.

I think it does in no way advance the interests of the Society, or benefit the public at large, by allowing an animal or article to receive the first premium in the same class year after year.

Such a course would at once discard the further use of diplomas, except for secondary premiums, though they were formerly considered the highest token of excellence bestowed by the Society for the animal or article, as well as one of high respect for the fortunate holders, and I cannot but hold it in the same exalted estimation still and more. What better source of giving publicity to our honorable efforts to excel with fair and strong competitors during our festal days than this? What more enduring and precious than the laurels of such a victory in such a form? Indeed, it would be no more than just that the fortunate holder should have emblazoned on its face in a bold round hand writing the names of animals or articles

and the number he defeated. As such it would prove a prize worth contending for.

Respecting the protest entered by me disproving the awards made on trotting stock, I have but little interest and less feeling. Complaints in the protest do not show one particle of personal anxiety on my part, though I was an exhibitor in the class, nor do I think that personal considerations should at any time be sufficient cause for any one to exercise this prerogative, so liberally granted by the committee, perhaps too much so. I feel no disposition to press them to a final issue agreeable to the printed rules of the Society, coming in contact as I must with my best friends. Yet they are in your hands and beyond my control; do with them as you think proper, and I shall be content.

Perhaps it may not be amiss to add that information has recently come to me that one of the trotting mares awarded a premium last fall never had a colt.

Respectfully yours,

JOHN STARKWEATHER.

Ypsilanti, Jan. 16, 1860.

On motion,

Resolved, That the Premium List in the class of trotting horses be amended so that mares five years old or over, with a colt or colt by their sides, have separate premiums, and that the mares four years old have likewise premiums offered for that particular age.

Adopted.

Mr. Sly moved that a series of rules be made and adopted for the government of the committees who have the charge of viewing horses, &c., that all competition as to speed may be reduced to single trials governed by them.

The motion was lost.

Mr. Crippen, from the Committee on Finance, made the following report, which was accepted and adopted:

To the President of the Michigan State Agricultural Society:

Your Committee, to whom was referred, for examination, the report of your Treasurer, as well as to ascertain the financial condition of your Society, beg leave to report, that they find the account of the Treasurer, submitted to you, correct.

From it we learn that the receipts and disbursements of your Society for the last year have been as follows:

From the State, annual appropriation,.....		$2,500 00
From Fair in October last,.....		6,639 00
Detroit subscription,.....		520 00
Total,.....		$9,659 00

The disbursements have been:

Due to the Treasurer at last an. report,	$ 96 72	
For premium cheecks of 1858,.....	293 00	
Expenses of Fairs of 1858 and 1859,..	9,075 44	
		9,465 16
Balance in Treasury,.....		$173 84

We find the Society is indebted:

For balance of premiums of 1858,.....	$ 40 00
To Brooks & Cockle, balance of building acct., (bearing interest from Oct. 1, 1858,).....	1,000 00
For their oustanding checks, Nos. 90, 111 and 112, amounting to,.....	84 12
Cash premiums of 1859,.....	2,927 00
Cash, medals and diplomas,.....	125 00
Cash, balance due Secretary to Jan. 17, 1860,..	465 00
Cash, amount of sundry vouchers paid by the Secretary, surrendered and cancelled,.....	182 13
Total,.....	$4,823 13

Although at first presentation, the above statement would appear to show an unsatisfactory condition of the affairs of your Society, we must congratulate you that such is not the case.

It has a property, in its buildings and fixtures, which has cost $5,640, needed and well arranged for future exhibitions. At no time since 1851, when the first indebtedness of your Society was created, has its assets nearly equalled its liabilities. Instead of an expenditure of twenty-two hundred dollars, as in 1858, twenty-four hundred, as in 1859, five hundred dollars will be sufficient to complete all necessary arrangements of the Society's grounds for your next Fair. In other expenditures the amount can be reduced one thousand dollars.

We have reason to believe that the above debt, or the greater part of it, will be provided for in a short time.

J. B. CRIPPEN,
E. N. WILCOX,
A. S. BERRY,
Committee.

Mr. Bogart appeared before the Committee and exhibited "Jebb's Telegraph Churn;" a trial was made, and cream, somewhat sour, was made into butter in a minute and a half. The construction, with regard to cleaning and working, is very simple.

Mr. Wilcox, from the Committee appointed for that purpose, reported the following resolutions as expressive of the sense of the Committee on the death of the late Hon. Epaphroditus Ransom, which were adopted:

Resolved, That this Society has received with sorrow, intelligence of the death, in the Territory of Kansas, of Hon. Epaphroditus Ransom, formerly of Kalamazoo, in this State.

Resolved, That the memory of the deceased should be greatly cherished by the members of this Society for his valuable efforts in the founding and organization of the same; for his early and continued identification with its interests, and for his zealous exertions in the cause of agriculture in our State.

Resolved, That whether as the chief judicial and execu-

tive officer of the State, or of the many other eminent positions occupied by him, or as a private citizen, the intercourse of the deceased with his fellow-men was always distinguished by urbanity of manner, a just regard for the rights of others, and a lofty and public spirit.

Resolved, That the Society sincerely sympathize with the family of the deceased in their loss, and that in testimony thereof the Secretary be requested to enter these resolutions on the journal, and to forward a copy of the same to the proper persons.

Mr. A. Guthrie appeared before the Committee and solicited leave to exhibit a small working model of the Sucker State Churn, which he explained was equally adapted to the making of butter, or being operated as a washing machine.

Leave was granted and churn examined.

The Committee adjourned till 7 o'clock P. M.

—

Wednesday Evening, 7 o'clock.

The Committee met.

On motion of Mr. Welsh, the Committee proceeded to the appointment of the Viewing Committees for the exhibition of 1860.

The report of Mr. John Allen, with plan of field drained, was taken up and examined.

On motion of Mr. Wilcox, ordered that the premium offered by the Society be awarded to him.

Mr. Wilcox called attention to a large amount of drainage and ditching performed by D. C. Holbrook, Esq., of Detroit, at his own expense, and moved that the diploma of the Society be presented to him as a manifestation of their appreciation of the public good he has thus performed.

On motion,

Resolved, That the diploma of the Michigan State Agri-

cultural Society be presented to D. C. Holbrook, of Detroit, as a testimonial of the appreciation in which his labors to improve, by drainage, the lands in the immediate vicinity of Detroit, are held by it.

Resolved, That the Secretary is hereby directed to prepare and transmit a diploma to D. C. Holbrook, Esq., in accordance with the above resolution.

On motion of Mr. Crippen,

Resolved, That in all cases where special premiums may be offered by citizens to be competed for at the annual exhibition of this Society, every facility will be afforded the party or parties offering the premium, to give such offers full publicity, and also to competitors to make a fair exhibit, accompanied with a just reward.

On motion of Mr. Welsh, the Business Committee was directed to award the premiums on counties making the largest number of entries at the State Fair.

The report of Simeon Davidson, of Tecumseh, on premium crops of clover seed, potatoes and oats was taken up and read.

On motion of Mr. Degarmo, ordered that the Secretary transmit to Mr. Davidson, his statement on field crops, with the request that they shall be made out in compliance with the rules of the Society, and that the premium be not awarded on oats, the quantity raised per acre not being considered unusual.

Mr. Wilcox, from the Committee on that subject, submitted the following report on the awards to thoroughbred horses, which was adopted:

The Committee to whom was submitted the protest relative to awards made on thoroughbred horses at the late State Fair, have the honor to report, that in the examination of this class at the last exhibition the Viewing Committee were not as close in their scrutiny of the pedigree of the animals exhibited, and competing, as the rules of the Society and its past practice required. But it is due

to that Committee to add that they were not originally appointed to discharge that duty, but were called and chosen after the opening of the Fair. In view of this circumstance, we recommend the withdrawal of the ban of suspension from the awards on this class, and the adoption of the following rule for the government of the Society in future:

Resolved, That it shall be necessary to enable any exhibitor to compete in the class of thoroughbred horses, that he shall file at the time of entering any animal therein, a properly and duly authenticated pedigree of such animal, showing its lineage unbroken and without flaw on either side from ancestors accredited as thoroughbred in the British or American Turf Register.

Mr. Wilcox moved that the protest of Thomas Williams be taken from the table and considered.

After discussion, on motion of Mr. Welsh, the further consideration of the said protest was indefinitely postponed.

The report of the Finance Committee was taken up and discussed.

Mr. Wilcox offered the following resolution:

Resolved, That the Secretary be, and he is hereby authorized to make notes of the Society for the aggregate amount of five thousand dollars, in such sums as may be found necessary, payable on or before the 10th day of October next, with interest at ten per cent., to the order of the Chairman of the Business Committee, at the Detroit Savings' Bank, and deliver the same to the Treasurer for negotiation, to meet the liabilities of the Society now due.

Resolution adopted unanimously.

Mr. Bayley, from the Special Committee relative to the awards made on cross blood cattle, reported that the Committee could not be ready to report at this session of the Executive Committee.

On motion of Mr. Welsh, the Committee was instructed

to continue their action, and to make a report to the Secretary, which report would be considered a final disposal of the matter.

Mr. Berry presented the following resolution:

Resolved, That the President and Secretary be instructed to invite the Hon. Horace Greeley, of New York, to deliver the Annual Address at the exhibition of 1860.

Mr. Crippen moved that the Hon. Cassius M. Clay be invited, and that the resolution be so amended.

Mr. Welsh moved further to amend by inserting the name of His Excellency Governor Wise, of Virginia.

Mr. Berry accepted the amendment of Mr. Crippen, and the resolution as amended was adopted.

Mr. Wilcox tendered his resignation as a member of the Executive Committee in accordance with the announcement made at the time of his election.

Mr. Crippen submitted the following resolutions:

Resolved, That we have heard with great regret the determination of Mr. Wilcox to sever his connection with this Committee.

Resolved, That we have ever had a high appreciation of his intelligence, judgment, and gentlemanly conduct; that we and the Society we represent are greatly indebted to him for his useful, zealous and efficient services; and that, in accepting his resignation, we take pleasure in tendering him our thanks for his services, and our good wishes for his future prosperity.

On motion of Mr. Degarmo,

Resolved, That Mr. Philo Parsons, of Detroit, be and is hereby chosen to fill the vacancy in this Committee occasioned by the resignation of E. N. Wilcox, Esq., and that the President be authorized to inform Mr. Parsons of his appointment.

On motion of Mr. Wilcox,

Resolved, That T. T. Lyon be and is hereby appointed delegate to represent the Michigan State Agricultural So-

ciety at the next session of the American Pomological Convention.

On motion,

Resolved, That the gold medal of the Society be awarded to James Waters, Esq., for his exhibition of his steam plow, and that it be issued whenever the President directs the same.

On motion of Mr. Crippen,

Resolved, That the Annual Exhibition of the Michigan State Agricultural Society be held on the 2d, 3d, 4th and 5th days of October next.

On motion of Mr. Welsh,

Resolved, That this Society will hold its next Fair at such place in this State as shall make to the Business Committee such offers, on or before the first day of July next, for its accommodation, as shall be deemed by them most advantageous for the Society, unless a subscription satisfactory in its character to the Business Committee, for at least one thousand dollars, shall be furnished to them on or before the 15th day of June next by the citizens of Detroit.

On motion of Mr. Sly, the Secretary was directed to examine the records relative to a certain premium claimed by John H. Button to have been awarded in 1857, but which has not been reported upon.

The protest of the breeders of Devon cattle being called up, the report of the Committee thereon was read and adopted.

The protest of H. M. Wright was taken from the table, and no further testimony being submitted, it was resolved that no further action was deemed necessary.

The protest of Joseph Black was considered, and no action deemed necessary.

The protest of E. W. Rising and R. Hamilton being considered, the request of this protest was denied, as no further testimony had been submitted.

The protest of Mr. Kellehar relative to awards on Ayr-

shire cattle was taken up, and a letter from Mr. Crawford submitting the pedigree of his stock was read.

On motion,

Resolved, That no further action be considered necessary in this case.

Mr. Starkweather having withdrawn his protest, no further action was necessary.

No further business being presented, on motion, the Executive Committee adjourned *sine die*.

R. F. JOHNSTONE,
Secretary.

ADDRESS

DELIVERED BY

HIS EXCELLENCY N. P. BANKS, GOVERNOR OF MASS.,

BEFORE THE

MICHIGAN STATE AGRICULTURAL SOCIETY,

DETROIT, OCTOBER 6, 1859.

The relation of land holders and cultivators of the soil, to governments, and their influence upon the elements of national wealth and the habits of the people, cannot easily be over estimated. The tendency of other pursuits to inordinate private accumulations of property has somewhat clouded our vision. It is hardly a cause of surprise that the bold business enterprises which have startled the world from sluggish courses of life, and translated their agents to elevated positions, high honors, and possessions of vast wealth, should tempt cupidity, or monopolize in great part the industrial enterprise of the land.

The first genuine property of the State is its land, a unique species of property in which possession is not at all dependent upon occupation. Every State frames its institutions with reference to this property. Monarchial governments make it the basis of their divisions of society, and establish orders of nobility upon its muniments of title. Despotisms find in it the surest support of crowns, and transfer their subjects with the soil, to which in some cases they are attached. Limited monarchies make its possession a badge of political freedom; society is organized, its separate classes and their peculiar privileges maintained by its perpetual possession in few hands, or

its distribution among masses of people; and men are really free in proportion as they may with facility and security possess, occupy or dispose of lands.

The abolition of rights of primogeniture and the statutes for the distribution of property in land as in other possessions, established by the American people with their government, have really as much to do with their political freedom as universal suffrage, the liberty of speech or the press.

The principle of republican governments demands the utmost possible freedom in transfers of land titles, as of other species of property. Every head of a family, wheresoever from, in whatever condition, however occupied, is entitled to a home upon the easiest possible terms consistent with the rights of property, and, if upon government lands, without profit or price.

We are taught by tradition, principle and experience, to regard the HOMESTEAD of the citizen or the frontier settler (to use an English phrase) as his stake in the country. Thus the cry of "*land for the landless*," which has the ring of a proletarian radicalism, or an agrarian shibboleth, is in truth the simple assertion of one of the fundamental principles of a republican government. Its effect is traced in our language. The word "farmer" means proprietor, and does not, as in other lands, designate a class of men renting lands, with far less of profit, improvement or liberty.

The prosperity and freedom of a people are measured by this principle, and political communities thus secure to their individual members their separate rights in proportion as they adhere or depart from it. A glance at history in any direction will verify that fact.

While the possession and occupation of land has an alliance so intimate and profound with the foundation, constitution and institutions of the State, it commands our consideration upon the higher ground that with it is in-

separably and perpetually associated the prosperity and business pursuits of the greater portion of the people.

The most numerous class of artificers, it is said upon high authority, will seldom, in a large country, average more than one in fifty or one in a hundred of the whole number of families; but in such large countries as England and France, the number of people employed in agriculture has by some authors been computed at a half, by others at a third, and by none at less than a fifth of the entire population.

In the United States two and a half millions, including only males fifteen years of age and over—a quarter of the industrial population—are engaged in agricultural pursuits. If to these we add those partially engaged or wholly dependent upon its success, we shall appreciate the relation it bears to the people, the wealth of a country, and its intimate connection with the origin, character, and existence of government. It employs and supports the people, creates materials and markets for manufactures, swells the surplus produce so far beyond what the maintenance of the people requires as to offer to commerce the cargo upon which its ventures are made, and from its profits, slender in detail but gigantic in the aggregate, which denote that the process of accumulation is slow and lengthy, it pays for the rich freights that float on every sea and fills the splendid metropolitian warehouses with products of substance, art, fancy and fashion.

The commercial marine of the world draws from the hearth-stones and home-alters of farming communities the young men—students of Falconer, Cooper, Dana, and Marryatt—who man the shrouds when seas run mountains high, or stand at the helm as the ship bears proudly and gaily upon the central marts of the world—who in the smoke of battle vindicates the freedom of the seas as the highways of God—or it may be, at the last extremity, in-

terrupt the death-rattle for one long, last heart-shout for the honor of their flag and the liberty of their country.

Whence come the recuperating vitality, intellect and learning, that in each generation give new life to the quick moving, resistless and prosperous town and city populations? Do lawyers, divines, deacons, merchants, mechanics, editors, philosophers, and fops reproduce themselves?

Never! it is from the farm that society reproduces itself; it is from the original sources of population and power, the cultivators of the soil, that advancing, recuperative, christian civilization seeks and finds new agents who work out her newer and nobler destinies.

Non-producers do not spring with equal numbers with the producing classes from the agricultural societies of the country. Superannuation is less for the reason that, with the abrasions of town and city life, human strength is earlier worn away, and the intensity of movement of metropolitan existence does not permit the regular and quiet movement which age demands. An earlier withdrawal from over-active contest is therefore an obedience to the laws of nature. The classes upon whom heaven has rained afflictions—the tenants of asylums, penitentiaries, and correctional establishments, into which

> "The over-loaded State
> Discharges her poor and profligate,
> Great nature's refuse—the dregs of men,
> That compose the black militia of the pen—"

do not represent in like proportion urban and rural populations.

The proportion of children, the wealth and hope of every land—for whom, in truth, we live, and without whom society would stagger on in devious paths for brief periods only—which every census since 1800 shows to be diminishing in every class, white, colored, free and slave, in the ratio of 31½ to less than 29 per cent. from 1850 to 1840, and in a similar proportion since the beginning of the cen-

tury, may be in part affected, among other causes, by the remarkable increase in the number and population of towns, and the different habits of life which town civilization begets, as compared with that of the country.

Thus, in whatever we consider the great and predominant interest of agricultural labor, it increases in importance, and its silent influences extend in every direction, as far as reason or imagination can trace its course.

It should become the first charge and care of the State. It must challenge the warmest affections of the people, and receive the attentive, thoughtful, philosophical consideration of every scholar and lover of his race. In a full comprehension of its nature and attributes, it ceases to be a question of social economy, and assumes the proportions of a problem of civilization and of national life. It fades from view, regarded simply as a matter of support, of forage so to speak, and assumes the dignity of one of the conditions of existence. What then is required of us? That it shall be made more acceptable to our people, that it shall be regarded in the light of a truer and higher national interest.

It requires, therefore, upon occasions like the present, a candid consideration of its deficiencies in organization, and its results, as well as a liberal and just view of its advantages and possibilities.

Mr. Adam Smith, in his essay upon the wealth of nations, makes a pregnant statement of the chief characteristics of the cultivators of the soil and the votaries of trade. He was, in no especial degree, the indiscriminate eulogist of land culture, nor the advocate of landed interests. His investigations of the invisible but not altogether unstudied ordinances which regulate the prosperity of civilized States, led him to disregard the ideas of his time, which, more than at present, looked to land culture, land interests, and landed possessions as the only dignified pursuit, the chief source of wealth, the safest foundation of politi-

cal power or stable government. The advantages of agricultural life can hardly be overdrawn when studied by one who gave to the results of commercial and manufacturing industry a new existence as an element of national wealth, and whose maxims are of the highest authority among the supporters of unrestricted commerce.

"Nations," he says, "which, like France or England, consist in a great measure of proprietors and cultivators (of land) can be enriched by industry and enjoyment. Nations, on the contrary, which, like Holland and Hamburgh, are composed chiefly of merchants, can grow rich only through parsimony and privation. As the interest of nations so differently circumstanced is very different, so is likewise the common character of the people. In those of the former kind, liberality, frankness, and good fellowship naturally make a part of that common character; in the latter, narrowness, meanness, and a selfish disposition, averse to all social pleasure and enjoyment."—*Wealth of Nations* 3d, 458.

Without in any manner accepting this view of the characteristics of purely commercial States as entirely correct, or indicating these tendencies of trading communities, especially as they exist in our own country, there is material for serious and instructive contemplation in what is said of the acquisition of agricultural wealth. "Nations which consist in a great degree of proprietors and cultivators of land can be enriched by enjoyment." They are absolved from the corroding cares, the parsimonious thrift, the greedy accumulation of inconsiderable profits, the hazard of reckless and distant enterprizes, the unavoidable dependence upon faithless agents, and the periodically yawning abyss of impending debt, or inevitable bankruptcy.

The seasons return. There is never universal failure of crops. If there be no unwarrantable investment in speculative enterprises, the success of which too oftenim pov-

erishes a country, and whose failure always destroys their agents, the surplus of one year overlaps and relieves the scarcity of another. In a word, they are enriched by industry and enjoyment. Surely the picture is not overdrawn. The beauty of rural scenery, the pleasure of rural life, the tranquility of mind, the independence of thought, and the unsullied truth of character which such pursuits permit and incite, have made them in all ages a support and a solace, where other more brilliant, more attractive and auspicious courses of life fail of the full fruition they promise. The infancy of human society was surrendered to these seductive and solacing labors; the permanency and prosperity of its meridian splendor are secured by them; and their charms seem, in every stage of existence, to draw men back from scenes of affluence and poverty alike to the primitive employments and enjoyments of man.

It is for the farmer that the seed bursts its tiny fetters, and under his eye that it opens into forms of thrift and beauty. His is the inexpressible pleasure of watching the fast succeeding miracles of annual verdures—of feeling the energy and joy which attends the beneficent exercise of creative power. The sun and frost do his work. For him the seasons roll, for him they return.

"For him, the spring
Distills her dews, and from the silken germ
Its lucid leaves unfolds; for him, the hand
Of autumn tinges every fertile branch
With blooming gold and blushes like the morn.
Each passing hour sheds tribute from her wing;
And still new beauties meet his lonely walk,
And loves unfelt attract him. Not a breeze
Flies o'er the meadow, not a cloud imbibes
The setting sun's effulgence, not a strain
From all the tenants of the warbling shade
Ascends, but whence his bosom can partake
Fresh pleasure, unreproved. Nor thence partakes
Fresh pleasure only; for the attentive mind,

By this harmonious action on her powers,
Becomes herself harmonious; wont so oft
In outward things to meditate the charms
Of sacred order, soon she seeks at home
To find a kindred order, to exert
Within herself this elegance of love,
This fair inspired delight. Her-tempered powers
Refine at length, and every passion wears
A chaster, milder, more attractive mien."

It is after an instructive experience in other rugged paths that we most readily turn for rest to the homely joys of rural life.

We shall profitably pass the present hour if, according to the measure of strength given us, we reserve the ordinary judgment of men upon the claims of this pursuit, and seek to make it an attractive and satisfactory vocation for ambitious as well as for satisfied and surfeited men.

The characteristics of trade which contribute most directly to its success are thrift and enterprise. Of these, although without great enterprise great accretions could not accumulate, thrift is by far the most important element. Small savings make more men and more nations affluent than great success. Whatever of ostentation may be exhibited in methods, the slightest observation will satisfy us that the strictest thrift makes the rounds of the ladder by which men rise. This is true of merchants and traders. The trift of the farmer generally bears no comparison, except, perhaps, in the use of money, with that of the successful and affluent trader. There are annual wastes upon every farm equal to its profits, which by only a portion of the sagacious care given by trade to the accumulation of small things, would offset present deficiencies of income, and produce a gratifying surplus.

Agriculture is deficient in enterprise. Until recently, it has made but few or no experiments among us; and, in many other nations, it still pursues, unchanged, the customs of thousands of years. The germs of agricultural

implements which have been exhibited to-day, and which must have powerfully impressed beholders, existed in the mechanical treasuries of the Greeks, Romans, Japanese and Chinese, thousands of years ago. This is true of the reaper, drill husbandry, portable manures and many other things. They are described in the works of ancient authors, if not with sufficient accuracy for reconstruction, yet enough to prove the possibility of their existence. Is it possible that adventitious aids, so remarkable as those of modern agricultural machinery, applicable to commercial or mechanical enterprises, could have rested untried, and remained unknown to merchants and manufacturers, for thousands of years? No one will credit it.

What miracles in the creative power of vegetation are wrought by drainage? Yet how many millions of acres, the most fertile, the most beautiful, the most convenient, now unproductive, never lifting to heaven the sweet smiles of waving golden grain, nor shaking the pearly dewdrops from the native bearing vine! They still wait a higher drainage, that shall take from the intellect of husbandmen the poisonous vapors of prejudice, and the deadening mildew of blind adherence to old customs.

There is a want of enterprise in the introduction of new methods and products that distinguishes, in some measure, disadvantageously the agriculturist from those engaged in the sister vocations of manufactures and commerce. It is impossible for us to content ourselves with the belief that the products of our day are the most productive, or the best adapted to public wants or a profitable market. The success attending recent experiment satisfactorily disproves this conclusion. In every respect there is still important improvement to be effected. We have but to recall the resistance made to the introduction of some of the most notable and necessary of existing products in our own and other countries. The potato, whose almost total disappearance we have recently feared as a world's calamity,

was not readily received into the family of useful domestic products. We had little of that trouble here, for it was a native of our continent, but in France it was introduced with the utmost difficulty. It was believed that the potato incited leprosy and fevers, a theory not much more absurd than some of our own time. It is related by Cuvier of Parmentier, who had learned the value of this most valuable and agreeable esculent in the prisons of Germany, where he had little or no other food, that, to induce the common people to try them, he had the small public plats on which he planted them, carefully guarded by day, in order to induce the municipal fillibusters of that time to steal them by night. "The potato," says Cuvier, "twice saved France from famine, and has fertilized its most barren and uninhabitable districts, and yet when Parmentier, who introduced it into France, was presented as a candidate, for a small office in one of the departments, the people said, 'We will never vote for him—he invented potatoes, and if elected he will make us eat them.'"

The introduction of Indian corn—the nativity of which as a product of our continent I was sorry to see questioned by American students of science—has been received with as little favor in England and Ireland, even in a period of public want, as the potato in France; and the Buddhists prohibit the use of beef as food, and the Jews pork. Though these regulations may have religion for their basis, neither is in any sense more absurd than the prejudices which long existed in this country against mutton. There is a tradition in the valley of the Connecticut river that, when the cool and delicious salmon was an overstock of food, a well-to-do family, suddenly interrupted by visitors, hid the salmon under the table, choosing rather to be thought without dinner than to be limited to the delicious flesh of the salmon. Such caprices seem incomprehensible to us; but what shall we say when the introduction of horse-flesh as an article of food, now so strongly pressed in France, is proposed to us?

There is no reason for charging greater subservieney to such prejudices upon farmers than upon other classes, but there ought to be much less, as the interest of their profession—which is to forage for the rest of the world—requires them to favor experiments and to lead the world in the discovery and adoption of novel articles of food.

It will be found on the contrary, I fear, in other lands, as in our own, that improvements have originated in many cases with other professions. The fowls of the air have been known to extend the culture of valuable grasses by their methods of transmitting seed.

I have already mentioned that the German prisons, through the instrumentality of Parmentier, led to the introduction of the potato in France. A clergyman in the Connecticut river valley, made acquainted with broom corn in his professional travels, carried with him the seed, I believe to the old town of Hadley, from whence by proper increase and distribution, it has changed the culture of the valley, and strengthened by inestimable value its industrial products.

I fear we have never given to the clergy of the country a full acknowledgement of the services they have rendered to the science of agriculture. Their taste for scientific inquiry and constantly professional travels enabled them at an earlier period to acquire most valuable information, and their great authority with their parishioners readily led to the adoption of their suggestions. The illustration I have given is but one example. There are many traditions of similar service.

More recently the tobacco culture has achieved an entire success in the same valley. It was introduced by a mechanic, not a farmer—one who has won distinguished reputation as an inventor and manufacturer of fire-arms. It is doubtful if his great triumph as an inventor secures to the public a greater benefit—assuming, if you please, tobacco to be as useful as revolvers—than this extension

of agricultural industry in New England. And yet the possibility of this culture, now so general, must have been known to generations of farmers. I can perfectly well remember seeing the tobacco plant in my father's garden, himself a mechanic and not a farmer, and growing the tobacco every year only because its plants were of such vigorous and luxuriant thrift.

The importance of such services as the introduction of new crops and new articles of food cannot be too highly estimated. They rise oftentimes to the dignity of national events, and mark the crisis of civilization.

It has been said upon competent authority that the culture of rice has altered the destinies of nations and changed the face of the globe. There can be little doubt, I suppose, that its culture contributed materially to the early civilization of the Hindoos and Chinese. Every one knows what the potato has done for Ireland, cotton for America, and the grape for Italy.

The same philosophic observation which suggests a new culture also cautions against too confident reliance upon a single product. It therefore strenously counsels rotation of crops, and protests against the pernicious policy of staples. All staples fail in time. The failure of rice brings a famine upon China and Japan, and we know well what sorrow the potato blight brought upon Ireland, and that of the grape upon Italy.

Philosophic investigation as well as field observation, is required in the selection of crops, with respect to the qualities of nutricion and capacity for production. The banana tree, says Humboldt, will furnish food for fifty persons upon the same surface which, under wheat, will maintain but two. The potato will maintain three times as many as wheat. The extent of country and the varieties of climate which a crop will endure are applicable elements in the estimate of its value.

The cotton-zone, as it is so called, which exerts so pow-

erful an influence upon the government, embraces but five States, of which, from curious causes, not more than one-third of each is adapted to the advantageous growth of cotton, and small parts of four others. It extends from the Atlantic to the Rio del Norte, and embraces about four hundred and fifty thousand square miles." It is a valuable crop, but it cannot, it appears, be increased to any remarkable degree, and it is likely in the end to come under the inevitable law of failure which follow staple products. All staples fail in time, and why not cotton as well as rice, the grape or potato.

Nature seems disciplined to perpetual favors in any special form and diversifies, what Young calls her ever-varying change with change. The world's experience as to staple products is a practical illustration of the poet, that "Long enjoyment is distress."

The wheat region embraces every State in the Union. It covers three million square miles. Its products can be increased to an indefinite extent, and it can scarcely fail in every part of the country at the same time. It is double in value the cotton crop, and, with the other grains, is equal to three times the value of all the staple products of slave labor.

I do not present these suggestions in a view to compare their products in importance, for that must be determined on other grounds, but as illustrations of the difference in products, in qualities of nutrition, and capacity of production, from which the attention of the farmer should never be diverted.

A similar line of thought suggests the advantages of alternate employments, as well as alternate products, in a country where the severity of seasons, varieties of climate, or limits of occupation restrict profitable labor to particular parts of the year.

The industry of New England is perhaps as remarkable a development as the history of man exhibits. There was

never a more forbidding disembarkation than that of the Pilgrim Fathers at Plymouth, the 22d December, 1620. It was the nakedest creation of nature in the bleakest season of the year. Granite, ice and children were the only natural products, and yet it has been made to blossom as the rose. No garden of Italy, no Utopia of the imagination, has pictures of greater beauty, or represents a truer prosperity, than the villages and cities that lie at the base of its metropolis, sleep in the mountain valleys, or line the banks of its beautiful rivers.

What seas has she not vexed with her toil; into what regions has her trade not penetrated; in what enterprise has she not shared; in what invention has she not participated; into what region of thought, abstract speculation or practical, has she not wandered; what ideas, political, social, moral, religious, has she not weighed and marked with her value?

She drew the lightning from the clouds, and lent it to carry messages, at so much a word, over continents and under seas, to the limit of the globe! She supplied Russia with locomotives, India with ice, Europe with models of naval architecture, and all the world with notions and machinery. An officer of the navy lately sent me a wisp of straw from the room at St. Helena in which the great Napoleon died, now occupied by a Yankee machine for separating grains.

Where are not her sons? Where not her daughters? If you take the wings of the morning and fly to the uttermost parts of the earth, they are there. Could you borrow the wings of the lark and soar to the empyrean heights, it is a thousand to one that some adventurous Yankee would shake his balloon ballast down upon you from above. Wherever enterprise disturbs the sleep of ages; wherever invention circumvents space and time; wherever the comfortable cottage, the thrifty town, the voluptuous city, are made to spring, magic like, from the

pathless forest or the unreclaimed prairie land, there you will find them, hand in hand with the wanderers from European and English homes. Of course they are here—here where the face of nature has been transformed, in a space so brief as to cheat old Time of his reckoning, from the rough titantic beauties of the wilderness to scenes of artistic and natural beauty that ravish the unschooled eye of the beholder. Here they are! her sons and her daughters! I see their glorious blue eyes shine. Were I blind I should still feel the presence, and my own would the burning tear-drop lave, that the imperfect sense of feeling could so imperfectly interpret and represent the visible sign of living, breathing beauty.

What constitutes the secret of their success! More than anything else, in my judgment, it is the capacity for alternate employments. It is rare to find a Yankee who can do but one thing. Their dual and triple faculties are variously applied in every department of industry. I lately, in a secluded farming town in New Hampshire, counted upon a slender mountain stream, not over four miles in length, and supplied with water but four or five months in the year, twelve or fifteen little manufacturing establishments, of the most primitive character and cost. This illustrates industry and symbolizes their power. The trees are growing while you sleep, says the Scotch proverb. The Yankee is busy while nature lies dormant and dead. Farmers in summer, manufacturers in winter; fishermen in season, mechanics and ploughmen the rest of the year; students in term time, teachers in vacation. In a climate like ours, men should hybernate, like animals, if no pursuit but that of land culture were intended for them.

I see no insuperable object in the way of successfully combining minor manufactures with agricultural pursuits. The rigor and length of our winters are the bugbears of our farmers. The second half of the year consumes what the first half produces. In climates where a rigorous win-

ter holds nature in fetters of frost for six months in the year, a possible alternation of employment is demanded. Innumerable advantages would flow from the adoption of such an idea throughout the northern States, where it is indispensable to a full prosperity that the rigors of a long winter should be circumvented. Men accustomed to mechanical employments for a part of the year would apply to land culture the small savings and the new methods which ensure success in mechanics. And thus the farmer would add the thrift and enterprise that distinguish purely commercial communities to the industry and enjoyment that have marked agricultural pursuits from the beginning of the world. Every hill and valley should glow with the industry of the shop, as with the seasonable beauties of the farm, that leisure may be profitably employed, contaminations of idleness dispelled, and the now desolate places made musical with the hum of market towns and the sustained energy of city populations.

The manufacturing interest of a country cannot be fully understood without separating its major and minor products. Staple manufactures are governed by the same laws that control agricultural staples. They require concentration of capital and people, and limit profits to first and few hands. The minor manufactures, more important in their aggregate results, diffuse profits equally among all; they are confined to no localities, demand no accretions of men, capital or skill; they are limited to no classes, and seek no credit. Where water power fails, steam is applicable, and where steam fails, the balance-wheel and hand-power suffice. No class is too feeble to share their toil and profits, none too vigorous for their highest duties. They were the earliest sources of the mercantile wealth of England, Holland and Spain, and have blessed every land that has made them welcome. They have the same effect upon men as upon States, creating artificers, and inventing the products of their skill. Why should we not

combine mechanical and agricultural pursuits, and running winter and summer into one season, create a people and a prosperity such as never stood under the burning eye of a tropical sun? Without infringing in any manner upon the proprieties of the occasion, I may say that industrial interests justly demand the intervention and aid of government; not as a favor, but as a right. In many respects its intervention is indispensable, as it regards property in land, invention, and the statute regulations of trade which have been recognized from the beginning of the world. No divorce can separate industrial interests from the duties of governments. They should be neither hostile nor nor indifferent, but founded upon the principles of recognition and support. They have now neither despotisms, nor dynasties, nor aristocracies, nor armies, to magnify or perpetuate; and except it be as a guardian of the material interests of a people, with the intellectual, moral and religious interests inseparably associated with them, there is now little or no missions for republican governments. Neithere ducation nor agriculture receive that consideration to which they are entitled.

We surely have a right to ask that the unsystematized and indirect recognition given to agriculture by the Patent Office, which may almost be said to be administered upon false pretences, be made to give place to an independent agricultural bureau such as Washington contemplated at the foundation of the government. If we are to abandon the hope of aid to agricultural education by the government of the Union, the more fervent and persistent should be the appeals of its friends to the enterprise of local societies and the legislation of States. The State of Michigan, I am proud to say, has achieved an enduring fame as first in the field for the foundation of an Agricultural College as a State institution. All honor to Michigan for its illustrious beginning of this great work, and let it be said also, as an honor second only to its foundation, that whether

successful or not, here at least in this noble enterprise has experiment been exhausted.

Fifty-four years since, in July, Michigan received a Territorial government of the first grade—the lowest grade of free government which the continent has known. Twenty years later the settlers had divided the lands upon principles of their own, and "tomahawk rights"—boundaries chipped upon the forest monarchs—stood in place of title deeds and the rights of possession and prescription. Seventy years ago the first court of law was held in the Northwest Territory, now an empire of eight millions of people—the land of promise, the seat of power, the hope of the future, "the expectancy and rose" of nations.

What a marvel in the history of the world is this culmination of State planting—this fecundity of empire-bearing civilization! Here the spoken word of freedom three-fourths of a century since covered an untrodden wilderness, and, like a column of fire by night, led hither the children of hope and heart from the advanced settlements of the seaboard, until organized liberty assumed the place of frenzied anarchy and war—until as now, around us pictures of beauty, representing the Christian progress of men, were substituted for the grandeur of primeval desolation! Here the races of the red men withered before the glance of the pioneer, and the murky and dark track of barbarism dried up at the bidding of the settler, as the chilling mildew of an autumnal night disappears before an October sun, like that above us! Here the great heart of woman, following the prompting of the Great Spirit and a love of her own, interceded for the salvation of the enemies of her race, and saved the infant settlements of white woman from the terrible vengeance of Pontiac, and the participants of her blood and her wrongs! Here the energy and endurance of the mother upheld the sinking heart of the settler, amid the decimation of disease and death that hung over him, and from her loins gave God's

pledges—more significant than the ancient bow of promise —for the triumph of the future?

It is a renewal of the miracles of the past, when, at the spoken word, seas opened for the passage of His children, or when they were led by ocular manifestations of Divine power to the paths of duty and the lands of promise.

And the theatre of such events is in keeping with the grandeur of their movements. When has the eye of man rested upon such gigantic formations and partitions of nature subdued to the use of men, where ideas overcome all obstacles in the path of progress, and circumvent time and space?

Look at the majestic chain of inland seas and mighty rivers—Ontario, Erie, Huron, Michigan, Superior—which was worshipped by Indians, who made sacrifices to the divinity of lakes, and cherished the copper nuggets its crystal waters revealed to them as household gods; the Ohio, the Mississippi, the Missouri, the Platte, the Kansas, the Arkansas, and the Del Norte, that bind together the disjointed parts of the continent in indissoluble bonds, and connect the outer oceans with the inland seas, and conduct to the central points, and thence freight to the ends of the earth, the mineral, vegetable, and commercial products of the valley of the Mississippi.

Nor are the agents of this miraculous period of human privilege less remarkable than the theatre of the exploits or the events of their history. Romance and poetry have no more inspiring themes than the explorations of Nicolet, Allonez, Marquette and La Salle; devotion no more martyrs than the Jesuits, who carried the word of peace to pagan warriors of the West, when, in the language of the American historian, France and Catholicism stood together alone in the valley of the Mississippi; heroism never had braver children than the fathers and mothers of the early West.

It was here, and then, that the peerless Washington was

led by a higher power than human hand, at the early age of eighteen, as the agent of the British Governor Dinwiddie, to survey from the mountain peaks of Virginia, on one side, the monuments of convulsed nature at the confluence of the Shenandoah and the Potomac, with the seaboard beyond, and on the west the opening valley of the Ohio and Mississippi, where at a later day, a myriad of prosperous and independent States were to hail him as liberator and father.

The past, however, has no more striking features than those of the promise-bearing future. The eight hundred per cent. increase of population that has occurred within the memory of men now around me does not measure the ratio of accumulation that the valley of the West will exhibit at the close of the present century. The theatre has been enlarged, and the agents of our civilization endowed with new and higher powers than ever before were given to the family of man.

For the undefined rights of property, the anarchy of mixed civilized and savage life, we have the settlement of law and the ordinances of stable government. The highway of civilization follows the Indian trail and the footpath of the pioneer. Cities and States are now planted where stood the wigwam and the log cabin. In place of the light canoe that skirted the shores of the Great Lakes or floated unresistently down the rapids of the great waters, we have the majestic ships and the resistless steamers that disperse torrents and head winds. Where our fathers heard the cry of the panther and the scream of the mountain eagle, our ears are startled with the steam whistle of the railway as it rushes over prairie lands through vanishing forests, exhausts the surplus wealth of the seaboard and inland cities, and bearing in its train the industrial products of millions and millions of people, slowly ascends and descends the Alleghany and Rocky mountains of the east and the west, the surging sorrow of

the locomotive in its heavy labor diversified with the rugged iron harmony of the Colliope, as if Enceladus, the son of Earth, at the altar of some mountain chasm, were singing the requiem of a fresh grief, or celebrating in unearthly epithalamium the agony of a new-born joy.

Instead of the solitary and stealthy messenger bearing tardy dispatches between long separated friends, so slow in progress as to dull the poignancy of grief and lose the touch of joy, we have the daily mail, the constant journal, the lightning speed of telegraphs.

The war-whoop of the Indian is heard no more, that darkened the sunlight and made night hideous by the terrors it inspired, but we have the silence of undisturbed peace, or listen upon the days of jubilee to the glad voices of freemen, that leaping like the lightning, the chains of mountains from eastern to western extremes, awaken echo from hill-top and cavern to answer to the song and the shout of liberty.

REPORTS

OF THE

COMMITTEES ON THE AWARDS OF PREMIUMS

MADE AT THE

11TH ANNUAL FAIR OF THE MICH. STATE AGL. SOCIETY,

Held at Detroit, October 4, 5, 6 and 7, 1859.

DIVISION A.—CATTLE.

CLASS I.—SHORTHORNS.

Bulls four years old and over.

63. S. W. Dexter, Dexter, Sirloin, 1st prem.,.....$20 00
15. A. & J. Barber, Avon, N. Y., Bletsoe, 2d prem., 10 00
84. D. M. Uhl, Ypsilanti, Lenox, 3d prem.,..... 5 00

Bulls three years old.

129. J. B. Crippen, Coldwater, Orpheus, 1st prem., 16 00
95. J. W. Childs, Augusta, Buena Vista, 2d prem., 8 00
109. Morgan Case, Napoleon, Sir David, 3d prem.,. 5 00

Bulls two years old.

72. B. Loveman, Owosso, Superior, 1st prem.,.... 12 00

Bulls one year old.

61. Tillotson & Wormley, Marshall, Farmer Boy, 1st prem.,..... 10 00
86. F. Bennett, Ypsilanti, New Years Day, 2d prem., 5 00
144. J. W. Keeny, Tipton, Duke 2d, 3d prem.,.... 3 00

Bull Calves.

70. S. W. Dexter, Dexter, Fortune, 1st prem.,.... 8 00
130. J. B. Crippen, Coldwater, Captain, 2d prem.,. 5 00

Cows five years old and over.

64. S. W. Dexter, Dexter, Victoria, 1st prem.,...$20 00
17. A. &. J. Barber, Avon, Queen 2d,..... 10 00
132. J. B. Crippen, Coldwater, Sarah Chambers, 3d prem.,..... 5 00

Cows four years old.

146. S. Sly & Sons, Plymouth, Beauty, 1st prem.,.. 15 00
85. D. M. Uhl, Ypsilanti, Bell Flower, 2d prem.,.. 8 00
19. A. & J. Barber, Avon, Betty Bliss, 3d prem.,. 5 00

Cows three years old.

147. S. Sly & Sons, Plymouth, Roannette, 1st prem., 12 00
65. S. W. Dexter, Dexter, Victoria 2d, 2d prem.,.. 6 00
148. S. Sly & Sons, Plymouth, White Jacket, 3d pre., 4 00

Heifers one year old.

150. S. Sly & Sons, Plymouth, New Year, 1st prem., 8 00
25. A. & J. Barber, Avon, Flora, 2d prem.,..... 4 00
134. J. B. Crippen, Coldwater, Songstress, 3d prem., 3 00

Heifer Calves.

68. S. W. Dexter, Dexter, Florence, 1st prem.,.... 8 00
136. J. B. Crippen, Coldwater, ——, 2d prem.,.... 4 00

No. 56. Jas. E. McKinley, Aldborough, Canada West, enters a (Durham) Shorthorn bull which we consider a fine bred animal and worthy of notice.

No. 72. B. Loveman, Owosso, Shiawassee—two years old bull which we consider a very superior animal, *with no competitor*, and award as above the first premium.

CHESTER YOST,
Chairman.

Pedigrees.

63. SIRLOIN—See No. 36 of Michigan Stock Register, and 2204 of American Herd Book.

15. BLETSOE—No pedigree filed.

84. LENOX—See No. 29, Michigan Stock Register.

129. ORPHEUS—See 1971 American Herd Book, and page 205, vol. 14 Farmer.

95. BUENA VISTA—No pedigree on file.

109. SIR DAVID—See 2212 of American Herd Book.

72. SUPERIOR—See 2272, American Herd Book.

61. FARMER BOY—See No. 71, Michigan Stock Register.

86. NEW YEARS DAY—No pedigree on file.

144. DUKE 2D—Calved March 16, 1858. Sire, Duke 443, by . Dam, Miss Kerr, by Milo; g. dam, Ruby by Spice; g. g. dam by Fitzroslin, 2026. (See p. 481, vol. 2, American Herd Book.)

70. FORTUNE—See No. 122, Michigan Stock Register.

130. CAPTAIN 2D—No pedigree on file.

64. VICTORIA—See p. 684, vol. 3, American Herd Book, and No. 113, Michigan Stock Register.

17. QUEEN—No pedigree on file.

132. SARAH CHAMBERS—See page 650, vol. 3, American Herd Book.

146. BEAUTY—See p. 303, vol. 3, American Herd Book.

85. BELLFLOWER—No pedigree on file.

19. BETTY BLISS—No pedigree on file.

147. ROANNETTE—See page 627, vol. 3, American Herd Book.

65. VICTORIA 2D—See No. 114, Michigan Stock Register.

148. WHITE JACKET 2D—See p. 696, vol. 3, American Herd Book.

150. NEW YEARS LADY—See p. 496, vol. 4, American Herd Book.

25. FLORA—No pedigree on file.

134. SONGSTRESS—No pedigree on file.

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CLASS II—DEVONS.

Bulls four years old or over.

107. Chas. Rich, Lapeer, Prince, 1st prem.,.....$20 00

87. J. Ballard & Sons, Niles, Major, 2d prem.,.... 10 00

112. B. Peckman, Albion, Hero, 3d prem.,..... $5 00

Bulls three years old.

142. Jno. Richards, Tecumseh, Young Duke of Devon, 1st prem.,..... 16 00
119. J. Allen & Sons, Coldwater, Young Zack, 2d p., 8 00
9. R. Wingfield, Amherstburg, C. W., Rover, 3d prem.,..... 5 00

Bulls two years old.

96. J. W. Childs, Augusta, Tempest, 1st prem.,.. 12 00
10. Calvin Pierce, Disco, Duke of Branch, 2d pre., 6 00
79. C. T. West, Elyria, O., Santa Anna, 3d prem., 4 00

Bulls one year old.

92. J. Ballard & Sons, Niles, Sultan, 1st prem.,... 10 00
80. C. T. West, Elyria, O., Dibble, 2d prem.,.... 5 00
38. Ira H. Butterfield, Utica, Tempest, 3d prem.,. 3 00

Bull Calves.

120. J. Allen & Sons, Coldwater, Major, 1st prem., 8 00
170. C. H. Williams, Coldwater, Rover, 2d prem.,. 4 00

Cows five years old or over.

114. J. Allen & Sons, Coldwater, Duchess, 1st prem., 20 00
113. " " Sophia, 2d prem.,.. 10 00
46. Ira H. Butterfield, Utica, Fay, 3d prem.,..... 5 00

Cows four years old.

76. C. T. West, Elyria, O., Duchess, 1st prem.,... 15 00
118. J. Allen & Sons, Coldwater, Young Fay, 2d pre., 8 00
89. J. Ballard & Sons, Niles, Mayflower. 3d prem., 5 00

Cows three years old.

90. J. Ballard & Sons, Niles, Red Lady, 1st prem., 12 00
173. C. H. Williams, Coldwater, Dora, 2d prem.,.. 6 00
100. J. W. Childs, Paint Creek, Beauty, 3d prem., 4 00

Heifers two years old.

116. J. Allen & Sons, Coldwater, Fanny, 1st prem., 10 00

78. C. T. West, Elyria, O., Ida 2d, 2d prem.,..... $5 00
175. C. H. Williams, Coldwater, Catharine,3d prem., 4 00

Heifers one year old.

117. J. Allen & Sons, Coldwater, Lady, 1st prem.,. 8 00
81. C. T. West, Elyria, Ohio, 2d prem.,..... 3 00

Heifer Calves.

102. J. W. Childs, Paint Creek, Victoria,..... 8 00

J. H. BUTTON,
WM. MOORE,
WALTER COONLY,
Committee.

Pedigrees.

107. PRINCE--No pedigree on file or on record.

87. MAJOR—See No. 476 of Devon Herd Book, and Michigan Stock Register in volume of Transactions for 1858.

112. HERO—No pedigree on file or record.

142. YOUNG DUKE OF DEVON—See No. 32 of Michigan Stock Register in volume of Transactions for 1858.

119. YOUNG ZACK—Calved, May, 1857. Sire, old Zack by the Dibble bull. Dam, Fairy; g. dam, Caroline, g. g. dam, Victoria; g. g. g. dam, Fancy 3d; g. g. g. g. dam, Old Fancy; g. g. g. g. g. dam, Devon, from the herd of King and Patterson.

9. ROVER—No pedigree on file or on record.

96. TEMPTEST—Calved in 1857. Sire, Chingacook 158, by Uncas 324, by Mequnticook, imported by C. S. Wainwright. Dam, Fairy, bred by E. P. Gapper, of Canada West; g. dam, Rose; g. g. dam Cherry, by imported Billy; g. g. g. dam, Beauty, imported by Mr. Gapper.

10. DUKE OF BRANCH 2D—See No. ——, Michigan Stock Register in Transactions for 1858.

79. SANTA ANNA—Pedigree not on file nor on record.

92. SULTAN—See No. 565 of Devon Herd Book.

80. DIBBLE—See No. 395, Devon Herd Book.

38. TEMPEST—Not on file or on record.

120. MAJOR—Calved April 25, 1859. Sire, Young Duke of Devon, by imported Duke of Devon. Dam, Duchess; g. dam, Sophia 2d; g. g. dam, Camilla Scott; g. g. g. dam, Victoria; g. g. g. g. dam, Sophia; g. g. g. g. g. dam, Devon, of the King and Patterson herd.

170. ROVER—Pedigree not on file nor on record.

114. DUCHESS—See dam of Major, above.

113. SOPHIA 2D—Calved April, 1852. Sire, Red Rover by imported Dibble. Dam, Camilla Scott; g. dam, Victoria; g. g. dam Sophia; g. g. g. dam, Devon, of the King and Patterson herd.

46. FAY—Pedigree not on file nor on record.

89. MAYFLOWER—See No. 1400 of Devon Herd Book, and No. 26 of Michigan Stock Register in Transactions for 1858.

90. RED LADY—See No. 1460 of Devon Herd Book, and No. 30 of Michigan Stock Register in Transactions for 1858.

173. DORA—Pedigree not on file nor on record.

100. BEAUTY—Sire, Hero, by young Duke of Devon, by imported Duke of Devon. Dam, Beauty, bred by Mr. Beck, of Wyoming county, N. Y., from stock of the King and Patterson importations.

116. FANNY—Sired by Allen's Young Duke, by imported Duke of Devon. Dam, Rosina; g. dam, Sophia 2d; g. g. dam, Camilla Scott, &c.; (see 113 above.)

78. IDA 3D—Pedigree on record in vol. 3, Devon Herd Book, No. 1327.

175. CATHERINE—No pedigree on record or furnished committee.

117. LADY—Sired by Allen's Young Duke, by imported Duke of Devon. Dam, Sophia 2d; g. dam, Camilla Scott, &c. (See 113 above.)

81. LADY—No pedigree on record, or on file with committee.

102. VICTORIA—Sire, Duke 3d, by Duke 2d, by Duke of Devon 405 of Herd Book. Dam, Lady Jane; g. dam, Ru

by; g. g. dam, Beauty, bred by Mr. Beck, of Wyoming county, N. Y., from the King and Patterson stock.

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CLASS II—HEREFORDS.

Bulls four years old.

200. James Cross, Elyria, O., Merman, 1st prem.,.. $20 00

Bulls three years old.

188. C. M. Bowen, Chelsea, Gallant, 1st prem.,.... 16 00

Bulls two years old.

207. Thomas Aston, Elyria, O., Grand Duke, 1st prem., ... 12 00

Bull one year old.

185. C. M. Bowen, Chelsea, Wolverine, 1st prem.,. 10 00

Bull Calves.

205. Thomas Aston, Elyria, O., Prince, 1st prem.,.. 8 00
206. Thomas Aston, Elyria, O., Noble, 2d prem.,... 4 00

Cows five years and over.

201. Thomas Aston, Elyria, O., Duchess, 1st prem., 20 00
284. C. M. Bowen, Chelsea, Lady Sotham, 2d prem., 10 00

Heifer three years old.

202. Thomas Aston, Elyria, O., Beauty, 1st prem., 12 00

Heifer two years old.

203. Thomas Aston, Elyria, O., Princess Alice, 1st prem., ... 12 00

Heifers one year old.

204. Thomas Aston, Elyria, O., Jenney, 1st prem.,. 8 00
214. Thomas Aston, Elyria, O., Nancy, 2d prem.,.. 4 00

CHESTER YOST,
Chairman.

CLASS IV—AYRSHIRES.

Bulls three years old.

181. C. Crawford, Commerce, Young Duke of Roxburgh, 1st prem.,.....$16 00
143. J. Kelleher, Marshall, Walter Scott, 2d prem., 8 00

The undersigned, Viewing Committee on Classes Nos. 2 and 4, have earnestly endeavored to discharge their duties in accordance with the rules established by the officers of the State Agricultural Society, but in doing so we have not been able to entirely escape a moderate amount of censure on the part of some of the exhibitors. Your Committee would here say that among the class of Devons there were some very fine ones exhibited; but taking into view their small size as compared with the Shorthorns, your Committee are of the opinion that as a class their breeding should not be encouraged by the Society. And that the list of premiums offered should not be as liberal as those offered for Shorthorns.

Your Committee also regret that when persons are appointed on Viewing Committees, they are not more punctual in attending to their duties. But two of the regular appointed Committee in our class could be got to act. Mr. Frink the regular Chairman, although on the ground, (so at least we were informed by those who know him,) never came near us, nor took any part in the examination.

All of which is respectfully submitted.

J. H. BUTTON, *Chairman.*
WM. MOORE,
W. L. COONLEY.

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CLASS VI—HERDS OF SHORTHORNS.

71. S. W. Dexter, Dexter, 1st prem., silver cup, valued at...$30 00

The undersigned, Committee, report that they have

carefully examined the herds presented for their examination, and after due deliberation and some doubt, (the merits and valuable qualities being so nearly balanced,) have awarded the premium as above.

ROBERT L. ROME,
Chairman.

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HERDS OF DEVONS.

123. J. Allen & Sons, Coldwater, 1st prem., silver cup, at.....$20 00

HERD OF HEREFORDS.

213. Thomas Aston, Elyria, O., 1st prem., silver cup, valued at..... 20 00

The Committee on this class have examined and are unanimous in awarding the first premium to No. 123, J. Allen & Sons, herd of Devons, and to No. 213, Thomas Aston, herd of Herefords; and consider No. 108, J. W. Childs, Paint Creek P. O., Washtenaw county, Mich., as being a herd of Devons of great merit, with the best bull of any; the other herds are also herds of decided merit.

K. S. BINGHAM, *Chairman.*
TITUS DORT,
WARREN FRINK,
CYRUS FULLER.

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CLASS VII—CROSS OF BLOOD.

Cows four years old or over.

190. C. W. Green, Farmington, 1st prem.,.....$12 00
189. C. W. Green, Farmington, 2d prem.,..... 8 00

Cows three years old.

190. C. W. Green, Farmington, 1st prem.,..... 10 00

Heifers two years old.

192. C. W. Green, Farmington, 1st prem., ... $8 00

Heifer Calves.

193. C. W. Green, Farmington, 1st prem.,..... 5 00
194. C. W. Green, Farmington, 2d prem.,..... 3 00

Your Committee would respectfully report that the entries made by Mr. Barker did not show any cross, and were therefore ruled out.

They would also state that Mr. Green had on exhibition a very fine cross blood bull calf, to which your Committee would have taken great pleasure in awarding a premium had any been offered.

H. O. HANFORD,
Chairman.

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CLASS VIII—GRADES AND NATIVES.

Grade Cows five years old and over.

124. J. S. Tibbetts, Nankin, Cherry, 1st prem.,....$12 00
3. J. H. Button, Farmington, 2d prem., ... 8 00
2. J. H. Button, Farmington, 3d prem.,..... 4 00

Native Heifers three years old.

52. David Thompson, Detroit, 1st prem.,..... 8 00

Grade Heifers two years old.

74. James Connelly, Marshall, 1st prem.,..... 8 00
110. Morgan Case, Napoleon, 2d prem,..... 5 00

Grade Heifers one year old.

111. James Holley, Napoleon, 1st prem.,..... 6 00
126. J. H. Button, Farmington, 2d prem.,..... 4 00

Heifer Calf.

75. James Connelly, Marshall, 1st prem.,..... 4 00

Your Committee respectfully report as above.

BENJ. SACKETT, *Ch'n*,
JACAB C. LAMB,
GIDEON SCOTT.

CLASS IX—WORKING OXEN.

6. J. H. Button, Farmington, 1st prem.,.....$15 00
187. C. W. Green, Farmington, 2d prem.,..... 12 00
182. Robert L. Rome, Ann Arbor, 3d prem.,..... 10 00

Committee on this Class report that there were but six yoke on exhibition, most of them very fine teams, and the test to which they were submitted showed that they were indeed working oxen.

After careful examination we award as above.

J. S. TIBBETS,

Chairman.

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CLASS X—STEERS.

Steers four years old.

105. P. & E. J. White, Lapeer, 1st prem.,.....$12 00
36. E. N. Wilcox, Detroit, 2d prem.,..... 8 00

Steers three years old.

57. J. & S. Tyler, Greenfield, 1st prem.,..... 10 00
163. D. W. Heath, Milford, 2d prem., ... 7 00

Steers two years old.

208. C. Dresser, Detroit, 1st prem.,..... 6 00

Steers one year old.

62. Calvin Clark, Detroit, 2d prem.,..... 3 00

Committee on this Class report that the exhibition of steers was very fine. No. 105, exhibited by P. & E. J. White, of Lapeer, (entered also as trained steers as below) are really splendid animals. The ease and facility with which they went through their various evolutions showed that they had been under the management of a careful trainer. The trainer stated that they had been under his tuition but one month, and that when they came into his possession they were a very wild, awkward, unmanageable

yoke; but under his skillful management they came under complete control. We therefore award to—

106. P. & E. J. White, Lapeer, yoke trained steers, 1st prem.,.....$10 00

We also recommend that in future a premium be offered to the trainer as well as to the trained.

145. E. Cook, Corunna, yoke steers 3 years old,....Discre.

Nos. 57 and 163 are splendid steers, girting respectively 7½ feet each.

J. S. TIBBETS,
Chairman.

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CLASS XI—FAT CATTLE.

Fat Oxen.

161. C. Dresser, Detroit, 1st prem.,.....$15 00
165. A. H. Heath, Commerce, 2d prem.,..... 10 00

Fat Steers three years old.

164. D. W. Heath, Milford, 1st prem.,..... 12 00
157. S. Sly & Sons, Plymouth, 2d prem.,..... 8 00

C. Durfee, of Nankin, had a pair of Devon steers which are strongly recommended.

A yoke of fat oxen were entered by John Starkweather, of Ypsilanti, but were not exhibited when called for, no one being present to answer to the call.

ROBERT L. ROME, *Ch'n*,
W. SMITH.

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CLASS XII—MILCH COWS.

156. S. Sly & Sons, Plymouth, 1st prem., ...$20 00
128. James Smith, Greenfield, 2d prem.,..... 10 00

The Committee appointed to judge on the milch cows entered for competition, would respectfully report that there were but three entries in this class. One of those,

No. 1, was ruled out by your Committee, as there was no statement of the amount of milch and butter, accompanying the cow, as the rules required. After carefully examining the other two entries, and the accompanying statements, both of which showed points of great excellence, your Committee awarded premiums as above.

JAMES WEBSTER CHILDS,
Chairman.

DIVISION B.—HORSES.

CLASS I—HORSES FOR ALL WORK.

Stallions four years old and over.

139. B. Green, Detroit, Messenger, 1st prem., ... $20 00
1. F. E. Eldred, Detroit, Kemble Jackson, 2d prem., ... 12 00
195. R. Hamilton, Romeo, Bruce Hambletonian, 3d prem., ... 8 00

Stallions three years old.

27. Charles Groh, Grosse Isle, Traveler Jackson, 1st prem., ... 12 00
250. E. Halsey, Warren, Robin Hood, 2d prem., ... 8 00

Stallions two years old.

216. B. F. Tobey, Kalamazoo, Young Messenger, 1st prem., ... 10 00
168. T. D. Griggs, Redford, 2d prem., ... 6 00

Stallions one year old.

129. Chas. Connelly, Marshall, Billy, 1st prem., ... 8 00
202. A. Brink, Nankin, Hill's Black Hawk, 2d prem., 5 00

Brood Mares, Colt by side.

283. Thomas Knight, Marshall, Lady Plover, 1st prem., ... 15 00
164. Chester Yost, Ypsilanti, Kate Hayes, 2d prem., 10 00
295. C. S. Treadwell, Wheatland, Gipsey, 3d prem., 8 00

Sucking Stallion Colts.

219. A. G. Dewey, Troy, 1st prem.,..... 4 00
23. F. E. Eldred, Detroit, Romeo, 2d prem.,..... 3 00

Sucking Fillies.

294. C. S. Treadwell, Wheatland, 1st prem.,..... 4 00
33. L. Hopkins, Almont, 2d prem.,..... 3 00

Mares three years old.

229. Geo. Button, Farmington, 1st prem.,..... 10 00
335. Ronald & Son, Detroit, 2d prem.,..... 6 00

Fillies two years old.

269. O. Ingalls, Almont, Nelly Gray, 1st prem.,... 8 00
30. F. E. Eldred, Detroit, Rosa, 2d prem.,..... 5 00

Filly one year old.

32. L. Hopkins, Almont, 1st prem.,..... 6 00

Your Committee would respectfully report that they noticed with pleasure an improvement in the young stock of this class in size. Small Horses, in the opinion of your Committee, are not desirable for all work. A fine colt, three year old stallion, of Sir Henry stock, entered by C. Crawford, of Commerce, Oakland county, was not shown to your Committee until after the premiums were awarded, by mistake of the owner. We cheerfully recommend a discretionary premium being awarded to this colt, No. 319. A three year old mare, No. 143, entered by D. M. Uhl, Ypsilanti, was also not shown to the Committee until premiums were awarded. This mare has fine size and action, and deserves some notice.

G. D. HILL,
Chairman.

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CLASS II—BLACK HAWKS AND MORGANS.

Stallions four years old and over.

261. F. V. Smith & Co., Coldwater, Magna Charta, 1st prem.,.....$20 00

276. E. B. Smith, Mt. Vernon, Selim, 2d prem.,....$12 00

Stallions three years old.

204. J. B. Crippen, Coldwater, Loafer, 1st prem.,.. 15 00
161. R. Wetherell, Genesee, Col. Richardson, 2d prem., ... 8 00

Stallions two years old.

170. H. N. Wright, Coldwater, Frank, 1st prem.,.. 10 00
256. E. S. Kelly, Reading, Morgan Trotter, 2d prem., ... 6 00

Stallions one year old.

225. A. C. Fisk, Coldwater, Frank, 1st prem.,..... 8 00
228. W. Burt, Mt. Vernon, 2d prem.,..... 6 00

Fillies three years old.

265. F. V. Smith, Coldwater, Miss McBride, 1st prem., ... 10 00
278. J. Starkweather, Ypsilanti, 2d prem.,..... 7 00

Fillies two years old.

266. F. V. Smith, Coldwater, Flora McFlimsy, 1st prem., ... 8 00
224. A. C. Fisk, Coldwater, Rosa Belle, 2d prem.,. 5 00

This Committee have awarded the first premium to Magna Charta, owned by Messrs. Smith & Co., of Coldwater. This horse is beyond a question one of finest and fastest trotters in the United States, of his age, and we most heartily congratulate our friends of Branch county, that they are favored with such an animal. His trot in 2:47 was not remarkable time for him, as he evidently was not put to his work, but went at his ease, in very fine style. We look forward to see some fine productions of trotters from this horse, to be added to the already fine young stock now on exhibition from Branch county.

In the award of the second premium, it was very difficult to make a selection, as there were several fine trot-

ters among them, and as that was a very strong point taken into consideration, we have made the award to Selim, No. 276, owned by E. B. Smith, of Mt. Vernon, he having made the next best time. There is a remarkable similarity in this class of stallions, style and action being very fine in all.

W. H. HANKINS,
SILAS COLBY,
A. S. HAYES,
CHAS. TULLY.

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CLASS III—THOROUGHBREDS.

The whole awards in this class are under protest, and by order of the Executive Committee, their publication is suspended.

CLASS IV—HORSES PARTLY THOROUGHBRED.

Stallions four years old.

281. C. W. Green, Farmington, Farmingtonian, 1st prem., ... $20 00
35. Willard White, Birmingham, Consternation, 2d prem.,..... 10 00

Stallions two years old.

44. R. R. Briggs, Romeo, Hambletonian, 1st prem., 10 00

Sucking Colts.

37. A. D. Power, Farmington, 1st prem., ... 5 00

Mares four years old.

74. E. N. Wilcox, Detroit, Winona, 1st prem.,.... 15 00
86. A. D. Power, Farmington, Dolly, 2d prem.,... 10 00

Mares three years old.

52. H. H. Keyser, Tecumseh, Dolly, 1st prem.,... 10 00

CLARK BEARDSLEE,
R. E. TROWBRIDGE,
SAM'L LYNDON.

CLASS IV—DRAUGHT HORSES.

Stallions four years old.

213. G. S. Hodges, Kalamazoo, Norman Tiger, 1st prem., ... $20 00
208. F. McHardy, Almont, Cumberland, 2d prem.,. 10 00

Stallions three years old.

167. J. S. Turner, Greenfield, Samson, 2d prem.,... 8 00

Stallions one year old.

105. J. Davidson, Hamtramck, 1st prem.,..... 7 00

Stallion Colt.

215. S. R. Kingsley, Kalamazoo, Young Norman, 1st prem.,..... 4 00

Mares four years old.

103. J. Davidson, Hamtramck, 1st prem.,..... 12 00
174. Ira H. Butterfield, Utica, 2d prem.,..... 8 00

Mares three years old.

278. H. A. Snyder, Greenfield, 2d prem.,..... 7 00

Mares two years old.

324. M. Winoch, Redford, 2d prem.,..... 5 00

Draught Geldings.

305. S. Wattles, Troy, 1st prem.,..... 6 00
292. S. Haydenburgh, Plymouth, 2d prem.,..... 5 00

P. Goodrich, of Kalamazoo, entered a very fine two year old stallion, which should have been placed in Horses for all work; the Committee recommend a Discretionary Premium.

TITUS DORT,
JOHN ALLEN,
T. F. GERLS,
A. WALES.

CLASS VI—TROTTING STOCK.

Stallions five years old or over.

221. A. C. Fiske, Coldwater, Moscow, 2:47¼, 1st prem.,.....Silver Cup or $20 00
127. Wm. Hayes, Marshall, Billy Downs, 2:55, 2d prem.,..... 12 00

Stallions four years old.

264. F. V. Smith, Coldwater, Rob Roy, 3:05¼, 1st prem.,..... 15 00
233. D. Hibbard, David Hill, Jr., 3:06, 2d prem.,.. 10 00

Stallions three years old.

52. J. H. Caniff, Detroit, Louis d'Or, 3:13, 1st prem.,..... 12 00
154. L. M. Sackett, Mt. Clemens, Robin, 3:16, 2d prem.,..... 8 00

Stallions two years old.

86. A. Wales, Erin, Abdallah, 3:43¼, 1st prem.,.. 10 00
128. Wm. Hayes, Marshall, Night Eagle, 3:43, 2d prem.,..... 6 00

Stallions one year old.

14. F. E. Eldred, Detroit, Path Finder,..... 7 00

Sucking Colts.

58. C. A. Green, Troy, Magna Charta, Jr.,..... 7 00

Brood Mares four years old or over with Colt or Colts by her side.

66. E. N. Wilcox, Detroit, Mason's Madam,..... 15 00

Brood Mares with Colt by side.

12. F. E. Eldred, Detroit, Nelly, 3:03¼, 1st prem., 15 00
57. C. A. Green, Troy, Oakland Maid, 2d prem., 10 00

Brood Mares three years old.

187. C. Paulus, Detroit, May Queen, 3:36, 1st prem., 12 00
249. J. Reardon, Romeo, Lilly, 3:44, 2d prem.,..... 8 00

Fillies two years old.

189. C. H. Williams, Coldwater, Timer, 3:54, 1st premium, ... $10 00

190. C. H. Williams, Coldwater, Time Keeper, 3:55, 2d premium,..... 8 00

Mares one year old.

53. J. H. Caniff, Detroit, Forest Rose, 4:08,..... 8 00

Sucking Filly.

223. A. C. Fisk, Coldwater, Lady Moscow,..... 6 00

Matched Trotting Horses four years old or over.

200. M. E. Crofoot, Pontiac, 3:96½, 1st prem., Silver cup or..... 15 00

154. S. McGregory, Detroit, 3:08½, 2d prem., Silver cup or..... 10 00

Single Gelding or Mare.

120. G. McStay, Detroit, Rosabella, 2:49, 1st prem., 10 00

96. Wm. C. Duncan, Detroit, Jim Canniff, 2:52, 2d prem., ... 8 00

M. E. CROFOOT,
A. O. HYDE,
K. C. BARKER,
C. A. MACK,
H. M. HINSDALE,
E. BUTTERWORTH.

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CLASS VII—STABLE OF COLTS.

296. A. C. Fisk, Coldwater, 1st prem., ... $25 00

H. B. HORTON,
J. M. LAMB,
A. PEARSALL,
F. FOWLER.

CLASS VIII—MATCHED HORSES.

Matched Carriage Horses 4 years old and over, for all work.

137. A. E. Pardee, Plymouth, 1st prem.,.....$15 00
40. N. W. Henderson, Novi, 2d prem.,..... 10 00

Three years old for all work.

28. Chas. Groh, Grosse Isle, 1st prem.,..... 10 00

Matched Carriage Horses four years old and over.

122. W. W. Robbins, Detroit, 1st premium,..... 15 00
16. F. E. Eldred, Detroit, 2d premium,..... 10 00

Single Carriage Horses four years old and over.

141. B. Green, Detroit, 1st prem.,..... 8 00
110. J. W. Strong, Detroit, 2d prem., ... 6 00

Single Carriage Horses three years old.

64. T. F. Gerls, Troy, 1st prem., ... 6 00

Trained Saddle Horses.

176. James Darrah, Monroe,.....Diploma.

D. B. HIBBARD,
H. L. HAYES,
C. A. GREEN,
S. M. SEELEY.

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CLASS IX—JACKS.

206. J. Arnold & Co., Adrian, 1st prem.,.....$20 00

Your Committee would respectfully award the premium on Jacks to No. 206, entered by J. Arnold & Co. We would also recommended a discretionary premium being awarded to C. Crawford, $5, No. 320; P. G. Cole, $5, No. 48, and I. H. Butterfield, $5, No. 175, one pair mules each, deeming the breeding of mules of great advantage to the farmers of the State, and would respectfully suggest that premiums liberal in amount should in future be offered on mules.

The Committee also report that H. Wall, of Canada, entered a well bred jack and jennett, and some mules, which they highly commend.

G. D. HILL, *Chairman.*

DIVISION C—SHEEP, SWINE AND POULTRY.

CLASS I—SPANISH MERINOS.

Bucks three years old.

14. H. Hitchcock, Lyons, 1st prem., Diploma and. $5 00
5. H. Hitchcock, Lyons, 2d prem.,..... 5 00

Bucks two years old.

165. B. Peckham, Albion, 1st prem., Diploma and.. 5 00
152. J. H. Fellows, Manchester, 2d prem.,..... 5 00

Bucks one year old.

188. N. S. Schuyler, Birmingham, 1st prem.,..... 5 00
7. H. Hitchcock, Lyons, 2d prem.,..... 4 00

Best five Buck Lambs.

107. B. Peckham, Albion, 1st prem.,..... 4 00
110. B. Peckham, Albion, 2d prem.,..... 3 00

Best five Ewes three years old and over.

99. Ira H. Butterfield, Utica, 1st prem.,..... 8 00
111. B. Peckham, Albion, 2d prem.,..... 6 00

Best five Ewes two years old.

112. B. Peckham, Albion, 1st prem,..... 6 00

Best five Ewes one year old.

117. B. Peckham, Albion, 1st prem.,..... 6 00
171. John Starkweather, Ypsilanti, 2d prem., ... 5 00

Best five Ewe Lambs.

114. B. Peckham, Albion, 1st prem., ... 6 00
158. J. H. Fellows, Manchester, 2d prem..... 5 00

CALVIN WHEELER,
Chairman.

CLASS II—FRENCH MERINOS.

Bucks three years old.

180. N. S. Schuyler, Birmingham, 1st prem., Dip. & $5 00
129. L. J. Thompson, Coldwater, 2d prem.,..... 5 00

Bucks two years old.

181. N. S. Schuyler, Birmingham, 1st prem., Dip. & 5 00
88. Ira H. Butterfield, Utica, 2d prem.,..... 5 00

Bucks one year old.

130. L. J. Thompson, Coldwater, 1st prem., Dip. and 4 00
90. Ira H. Butterfield, Utica, 2d prem.,..... 4 00

Best five Ewes three years old.

92. Ira H. Butterfield, Utica, 1st prem.,..... 8 00
132. L. J. Thompson, Coldwater, 2d prem.,..... 6 00

Best five Ewes two years old.

94. Ira H. Butterfield, Utica, 1st prem.,..... 6 00
55. Joseph Tireman, Greenfield, 2d prem.,..... 5 00

Best five Ewes one year old.

133. L. J. Thompson, Coldwater, 1st prem.,..... 6 00
95. Ira H. Butterfield, Utica, 2d prem.,..... 5 00

D. WAIT, *Chairman.*

CLASS III—SAXON AND SILESIAN.

Bucks three years old and over.

205. Whittaker & Jeffries, Dexter, 1st prem., Dip. & $5 00
138. J. P. Gillett, Manchester, 2d prem.,..... 5 00

Bucks two years old.

139. J. P. Gillett, Manchester, 1st prem., Dip. and 5 00
143. J. P. Gillett, Manchester, 2d prem.,..... 5 00

Bucks one year old.

206. Whittaker & Jeffries, Dexter, 1st prem., Dip. & 4 00
183. N. S. Schuyler, Birmingham, 2d prem.,..... 4 00

Best five Buck Lambs.

184. N. S. Schuyler, Birmingham, 1st prem.,..... 4 00
141. J. P. Gillett, Manchester, 2d prem.,..... 3 00

Best five Ewes three years old or over.

149. J. P. Gillett, Manchester, 1st prem.,..... 8 00

Best five Ewes two years old.

146. J. P. Gillett, Manchester, 1st prem.,..... 5 00

Best five Ewes one year old.

185. N. S. Schuyler, Birmingham, 1st prem.,..... 6 00
147. J. P. Gillett, Manchester, 2d prem.,..... 5 00

Best five Ewe Lambs.

150. J. P. Gillett, Manchester, 1st prem.,..... 6 00
148. J. P. Gillett, Manchester, 2d prem., ... 5 00

E. ARNOLD,
Chairman.

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CLASS IV—SOUTHDOWNS.

Bucks three years old and over.

80. Samuel Toms, Elyria, O., 1st prem., Dip. and $5 00
66. W. Whitfield, Waterford, 2d prem.,..... 5 00

Bucks two years old.

81. Samuel Toms, Elyria, O., 1st prem., Dip. and 5 00
74. Daniel Whitfield, Pontiac, 2d prem., ... 5 00

Bucks one year old.

63. Henry Birge, Waterford, 1st prem., Dip. and.. 4 00
82. Samuel Toms, Elyria, O., 2d prem.,..... 4 00

Pen Buck Lambs.

67. W. Whitfield, Waterford, 1st prem.,..... 4 00
77. Daniel Whitfield, Pontiac, 2d prem.,..... 3 00

Best five Ewes three years old and over.

83. Samuel Toms, Elyria, O., 1st prem., ... 8 00
70. Daniel Whitfield, Pontiac, 2d prem.,..... 6 00

Best five Ewes two years old.

84. Samuel Toms, Elyria, O., 1st prem., ... $6 00
64. Wm. Whitfield, Waterford, 2d prem.,..... 5 00

Best five Ewes one year old.

65. Wm. Whitfield, Waterford, 1st prem.,..... 6 00
85. Samuel Toms, Elyria, O., 2d prem.,..... 5 00

Best five Ewe Lambs.

69. Henry Birge, Waterford, 1st prem.,..... 6 00
73. Daniel Whitfield, Pontiac, 2d prem.,..... 5 00

AUSTIN WAKEMAN,
Chairman.

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CLASS V—LEICESTER AND COTSWOLDS.

Bucks three years old and over.

79. Daniel Coonradt, Parma, Leicester, 1st prem., Diploma, and..... $5 00
18. J. Pridgeu, California, Mich., Liecester, 2d pr., 5 00

Bucks two years old.

45. H. D. Smith, Aldborough, C. W., Liecester, 1st prem., Diploma and..... 5 00
46. H. D. Smith, Aldborough, C. W., Liecester, 2d prem.,..... 5 00

Bucks one year old.

195. Chas. Crawford, Commerce, Leicester, 1st pr., 4 00

Best five Buck Lambs.

12. R. Wingfield, Amherstburgh, C. W., Cotswold, 1st prem..... 4 00
13. R. Wingfield, Amherstburgh, C. W., Cotswold, 2d prem.,..... 3 00

Best five Ewes three years old.

176. John Chamberlain, Avon, O., Cotswold, 1st pr., 8 00
177. " " " 2d pr., 5 00

Best five Ewe Lambs.

179. J. Chamberlain, Avon, O., Cotswold, 1st prem., $6 00
48. H. D. Smith, Aldborough, C. W., Liecester, 2d prem., ... 5 00

S. W. BROWN,
Chairman.

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CLASS VI—FAT SHEEP.

None on exhibition.

CLASS VII—SWINE.

Essex Boars one year old and over.

122. J. S. Tibbits, Plymouth, 1st prem., ... $5 00
25. E. H. Cressey, Royal Oak, 2d prem., ... 3 00

Suffolk Boars one year old and over.

3. F. E. Eldred, Detroit, 1st prem., ... 5 00
199. E. Hamilton, Royal Oak, 2d prem., ... 3 00
15. Wm. Smith, Detroit, 3 fat pigs, Suffolk, 1st prem., ... 3 00
123. J. S. Tibbits, Plymouth, sow 13 months old, Essex, 1st prem., ... 5 00
125. J. S. Tibbits, Plymouth, 4 pigs 10 weeks old, Essex, 1st prem., ... 5 00
121. J. S. Tibbits, Plymouth, 1 Essex sow 3 years old, 1st prem., ... 5 00
200. E. Hamilton, Royal Oak, 1 Grade sow 2 years old, 1st prem., ... 5 00
201. E. Hamilton, Royal Oak, 5 pigs, Grade, 1 mo. old, 1st prem., ... 5 00
220. A. C. Harris, Toledo, O., 1 Suffolk sow, 3 years old, 1st prem., ... 5 00
221. A. C. Harris, Toledo, O., 8 Suffolk pigs, 1 mo. old, 1st prem., ... 5 00
128. J. S. Tibbits, Plymouth, 4 pigs, cross blood, 9 months old, 2d prem., ... 3 00

S. P. WORMLY, *Chairman.*

CLASS VIII—POULTRY.

21.	F. Leslie, Dearborn, 3 Turkeys, 1st prem.,		$2 00
22.	" "	1 pair Geese, 1st prem.,	2 00
23.	" "	1 pair Bantams, 2d prem.,	1 00
24.	" "	lot Dorkings, 1st prem.,	2 00
28.	E. H. Cressey, Royal Oak, 3 wild Sumatra, a good cock,		1 00
29.	E. H. Cressey, Royal Oak, 3 Sumatra Pheasants, 1st prem.,		2 00
33.	E. H. Cressey, Royal Oak, 3 Black Spanish, 1st prem.,		2 00
37.	E. H. Cressey, Royal Oak, 3 white Bantams, 1st prem.,		2 00
39.	E. H. Cressey, Royal Oak, 3 Sea Bright Bantams, 1st prem.,		2 00
43.	E. H. Cressey, Royal Oak, Variety Fowls, 1st prem.,		5 00
59.	Joseph Tireman, Royal Oak, Cochin China, 2d prem.,		1 00
120.	S. Smith, of Detroit, 9 boxes of Rabbits, 1st prem.,		2 00
161.	A. Watson, Detroit, lot of Malacca Game,		1 00
202.	E. Hamilton, Royal Oak, lot of Colored Dorkings, 2d prem.,		1 00
217.	Joseph Aber, Leoni, 2 boxes Rabbits, 2d prem.,		1 00
135.	E. K. Gilbert, Detroit, lot of Asiatic Fowls, 1st prem.,		2 00
136.	C. T. Phillip, Redford, 1 pair Wild Turkeys, 1st prem.,		2 00
222.	F. Leslie, Dearborn, one pair Guinea Fowls, 1st prem.,		2 00

A. A. GARDNER,
Chairman.

DIVISION D.—FARM IMPLEMENTS.

CLASS I—IMPLEMENTS FOR THE CULTIVATION OF LAND, CROPS, AND GENERAL SPRING WORK.

Plows.

25. Double mould board plow, Waters, Lathrop & McNaughton, Jackson, Diploma and..... $3 00
98. Sub-soil plow, Hunter & Moir, Northville, Diploma and..... 3 00
99. Wrought-iron plow for general use, Hunter & Moir, Northville, Diploma and..... 3 00
104. Steel plow, T. A. Parker, Detroit,.....Diploma.
116. Sod plow, B. Martin & Co., Cleveland, O., Diploma and..... 3 00
118. Corn plow, B. Martin & Co., Cleveland, O., Diploma and..... 3 00
126. Breaking-up plow, Shutts & Furrier, Ypsilanti, Diploma and..... 3 00
208. Mole plow for tile draining, H. R. Lerome, Monroeville, O.,.....Diploma.

Harrows.

97. Wrought-iron harrow, Hunter & Moir, Northville, Diploma and..... 3 00
206. Round rotary harrow, Wm. H. Fargo, Cleveland, Ohio,.....Diploma.
22. Corn-cultivator, Waters, Lathrop & McMaughton, Jackson,..... 3 00
214. Wheel grain-cultivator, for one horse, T. A. Flower, Detroit, Diploma and..... 3 00
108. One-horse scarificator, Bloss & Co., Detroit,..Diploma.
109. One-hand " " " ..Diploma.

Seed Drills and Seed Sowers.

187. Grain drill, E. W. Moore, Ypsilanti, Diploma and..... 5 00
168. Garden drill, Sam'l Stanbro, Plymouth, Diploma and..... 3 00

15. Seed sower, P. B. Sanborn, Detroit,..... $3 00
167. Grass seed-sower, S. Stanbro, Plymouth, Diploma and..... 3 00
57. Hand seed-planter, N. A. Davis, Concord, N. H., Diploma and..... 3 00
203. Horse corn-planter, B. G. Stewart, Washington, Diploma and..... 5 00
166. Plaster sower, Sam'l Stanbro, Plymouth,.....Diploma.
55. Six hoes, Waters, Lathrop & McNaughton, Jackson, Diploma and..... 1 00
58. One hand-hoe to change blades, N. A. Davis, Concord, N. H.,.....Diploma.
62. Set of garden tools, Waters, Lathrop & McNaughton, Jackson, Diploma and..... 10 00
59½. Machine for extracting stumps, moving buildings, N. A. Davis, Concord, N. H.,.....Diploma.
185. Kirby's American Harvester and Combined Mower and Reaper, T. G. Limbocker, Trenton, Diploma and..... 10 00
31. Two-horse mowing machine, Waters, Lathrop & McNaughton, Jackson, Diploma and..... 10 00
68. One-horse mower, R. L. Howard, Buffalo, Diploma and..... 10 00
65. Reaper, R. L. Howard, Buffalo, Diploma and.. 10 00
39. Six scythes, Waters, Lathrop & McNaughton, Jackson,..... 2 00
39½. Six snathes, Waters, Lathrop & McNaughton, Jackson,..... 2 00
48. Six rakes, Waters, Lathrop & McNaugton, Jackson,..... 1 00
58. Horse rake, N. A. Davis, Concord, N. H., 1st prem..... 3 00
4. Machine for unloading hay, Stephen Bullock, Columbia, Pa., Diploma and..... 5 00
159. Machine for husking corn, Daniel C. Smith, Tecumseh, Diploma and..... 3 00

53. Grain cradles, Waters, Lathrop & McNaughton, Jackson,..... 2 00
35 and 36. Hay forks, Waters, Lathrop & McNaughton, Jackson,..... 2 00
26. Potato digger, Waters, Lathrop & McNaughton,.....Discretionary.
43 and 46. Grain scoops, Waters, Lathrop & McNaughton, Jackson,.....Discretionary.
198. Clover Picker, W. S. Smith, Galesburgh,.... 3 00

The Committee would respectfully report that they have carefully examined the articles on their list, and have awarded the foregoing premiums, but feel it their duty to the farming interest, as well as to the inventors, to say that Wood's Mowing Machine, and a wrought iron Mowing Machine, No. 88, entered by Fisher, Sholters & Co., of Alliance, Ohio, are both very highly spoken of by those who have used them, and in the mind of your Committee excellent articles. No. 60, (shackles and clips,) your Committee were unable to find.

J. E. BEEBE,
Chairman.

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CLASS III—APPARATUS AND MACHINES CONNECTED WITH THE CLEANING AND PREPARATION OF CROPS FOR MARKET, AND FOR THE FEEDING OF STOCK.

105. Threshing machine, combined with horse power and separator, Wm. Brown, Battle Creek, Diploma and.....$10 00
70. Thresher and separator, C. Aultman & Co., Canton, Ohio,..... 8 00
29. Horse power, R. R. style, Waters, Lathrop & McNaughton, Jackson, Diploma and..... 6 00
107. Horse power, R. R. style, Wm. Brown, Battle Creek, Diploma and..... 6 00

170. Fanning Mill, (Sealy & Griswold's,) T. M. Russell, Brooklyn, Diploma and..... $4 00
192. Hay, Stalk and Straw Cutter, (horse power,) A. B. & G. H. Felt, Brooklyn, Diploma and.... 5 00
2. Hay, Straw and Stalk Cutter, (hand power,) C. P. Woodruff & Co., Detroit, Diploma and... 3 00
120. Horse power Corn Sheller, B. Martin & Co., Cleveland, O., Diploma and..... 3 00
127. Hand power Corn Sheller, Shutts & Furrier, Ypsilanti, Diploma and..... 2 00
120. Horse power Hay and Straw Cutter, B. Martin & Co., Cleveland, O., Diploma and..... 3 00
196. Root Cutter, L. Draper, Troy, Diploma and... 3 00
137. Apparatus for steaming food for Cattle, Peter M. McNoah, Detroit, Diploma and..... 10 00
138. Model for Agricultural Boiler and Sugar Evaporator combined, Peter M. McNoah, Detroit, Dip.
139. Model for Drying Grain, (Buckley's,) Peter M. McNoah, Detroit,.....Diploma.
162. Portable Agricultural Furnace, W. S. Penfield, Detroit,.....Diploma.
169. Portable horse power Mill, R. L. Howard, Buffalo, N. Y., Diploma and..... 5 00
86. Cider Mill, M. Smith, Birmingham,..... 3 00
157. Portable Steam Engine, Augustus Day, Detroit, Dip.
96. Improved Smutter and Grain Separator, J. B. Turner, Cuyahoga Falls, O.,.....Diploma.
113. Model for Treshing and Cleaning Clover, John C. Birdsell, West Henrietta, N. Y., ...Diploma.
114. Equalizer for Threshing Machine, Geo. Hely, Dexter,.....Diploma.

N. B.—No. 69, Portable Feed Mill, exhibited by R. L. Howard, of Buffalo, N. Y., your Committee find worthy of the attention of the farmers of this State, affording a cheap

mill for grinding coarse grains, combining efficiency and evident durability.

All of which is respectfully submitted.

F. M. HOLLOWAY,
Chairman.

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CLASS IV—BARN YARD ARTICLES, &C.

90. Farm Wagons, Adams & Smith, Battle Creek, $5 00
211. Farm Wagons, Austin & Tomlinson, Jackson, Diploma.
190. Whiffletrees, Adams & Smith, Battle Creek,.. $2 00
7. Fairbanks' Hay Scales, Farrand & Sheley, Detroit, Silver Medal and..... 5 00
132. Plow Harness, F. Monroe, Romeo,..... 3 00
111. Machine for Sawing Wood, E. D. Hallock, Rochester, N. Y.,..... 5 00
37–8. Manure Forks, Waters, Lathrop & McNaughton, Jackson,..... 2 00
41, 42, 47. Shovels, Waters, Lathrop & McNaughton, Jackson,..... 1 00
40. Best lot of Tools taken as a whole, Waters, Lathrop & McNaughton, Jackson,.....Diploma.
79. Set of Grain Measures, W. S. Penfield, Detroit, 1 00
102. Road Scraper, T. A. Parker, Detroit,..... 1 00
78. Ox Yoke, W. S. Penfield, Detroit,..... 1 00
51. Potato Hooks, Waters, Lathrop & McNaughton, Jackson, Discretionary,..... 1 00
52. Spading Forks, Waters, Lathrop & McNaughton, Jackson, Discretionary,..... 1 00
54. Weeding (6 tooth) Fork, Waters, Lathrop & McNaughton, Jackson, Discretionary,..... 1 00
56. Floral Rakes, Waters, Lathrop & McNaughton, Jackson, Discretionary,..... 1 00
153. Lifting Jack, N. Decker, East Cleveland, O., Diploma.
164. Farm Baskets, W. S. Penfield, Detroit, Discretionary,..... 1 00

W. T. MITCHELL, *Chairman.*

CLASS V—DAIRY AND HOUSEHOLD ARTICLES.

131. Improved Churn, T. A. Tooker, Ypsilanti,... $3 00
84. Cheese Press, W. S. Penfield, Detroit,..... 2 00
83. Six Milk Pans, W. S. Penfield, Detroit,..... 1 00
183. Well and Cistern Pump, A. W. Richards, Mt. Clemens,..... 2 00
28. Dog Power, Waters, Lathrop & McNaughton, Jackson,.....Diploma.
171. Improved Clothes Frame, Livermore & Bro., Wauseon, O.,.....Diploma.
199. Hall's Washing Machine, A. M. Richards, Mt. Clemens,..... 2 00
86. Fairbanks' Dairy Scales, Farrand & Sheley, Detroit,..... 2 00

Miscellaneous.

6. Drain Tile Machine, John Daines, Birmingham, Dip.
5. Drain Tile, John Daines, Birmingham,..... Dip.
10. Morticing Machine, Lovett Eames, Kalamazoo, Dip.
110. Machine for Improving Roads, Nathan Potter, Battle Creek,..... Dip.
140. Model for Farm Gate, A. Jackson, China, N. Y., Dip.
154. Weather Strip for Doors and Windows, N. Decker, East Cleveland, O.,..... Dip.
141. Rotary Pump, M. G. Spear, Pontiac,..... Dip.
158. Machine for Pulling Stumps, D. C. Smith, Tecumseh,..... Dip.
182. Grinder for Mower and Reapers, W. S. Penfield, Detroit,..... Dip.
209. Sugar Cane Crusher, Hughes, Ramsdell & Co., Mead's Mills,..... Dip.
77. Turn-table Apple Pearer, W. S. Penfield, Detroit,..... Dip.
89. Winegar's Capstan Gate, J. Sleeper, Kalamazoo, Dip.
73. Animal Trap, Albert Russell, Wellsburgh, Pa., Dip.

A. C. WALKER,
Chairman.

DIVISION E.—DAIRY AND HOUSEHOLD MANUFACTURES.

CLASS I—BUTTER AND CHEESE.

40. New cheese, A. Granger, Milton, 1st prem.,.. $5 00
57. " John Bradford, Lasalle, 2d prem., 3 00
6. " R. R. Briggs, Romeo, 3d prem.,.. 2 00
77. " W. H. Cleveland,.....Discretionary.
59. One year old cheese, J. B. Smith, Farmington, 1st prem.,..... 5 00
60. One year old cheese, J. B. Smith, Farmington, 2d prem.,..... 4 00
43 and 45. 25 lbs. June butter, T. H. Tooker, Ypsilanti, 1st prem.,..... 5 00
30. 25 lbs. June butter, Mrs. C. O. Tibbits, Plymouth, 2d prem.,..... 3 00
37. 25 lbs. September butter, J. Smith, Greenfield, 1st prem.,..... 5 00
69 and 70. 25 lbs. September butter, S. Sly & Sons, Plymouth, 2d prem.,..... 3 00

W. W. MURPHY,
Chairman.

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CLASS II—SUGAR AND HONEY.

1. Ten lbs. maple sugar, A. D. Power, Farmington,..... $2 00
34 and 65. Ten lbs. maple sugar, O. Ingalls, Almont, ...Discretionary.
63. 20 boxes honey, E. B. Spencer, Oak,..... 2 00

CLASS III—BREAD, PRESERVES AND PICKLES.

31. 3 loaves salt rising bread, Mrs. C. O. Tibbits, Plymouth, 1st prem.,..... 3 00
66. 3 loaves salt rising bread, Mrs. J. W. Vernoy, Detroit, 2d prem.,..... 2 00
91. 3 loaves soda rising bread, S. Sly & Sons, Plymouth,..... 3 00

14. Corn bread, Mrs. E. Perkins, Birmingham, 1st prem., ... 2 00
4. Corn bread, Mrs. J. Button, Farmington, 2d prem., ... 1 00
41. 3 loaves flour bread made by a girl under sixteen, Miss T. K. Bradner, Plymouth,..... 3 00
20. 3 loaves flour bread, made by a girl under sixteen, Miss Gertrude Yerkes, Northville, Discretion'y.
51. 3 loaves rye and Indian bread, Mrs. F. Gaines, Detroit,..... 3 00
53. Currant jelly, Mrs. F. Gaines, Detroit,..... 2 00
95. Specimen pickles, Mrs. J. T. Burchard, Detroit, 2 00
23. Fruit wine, A. Pixley, Detroit,. 2 00
92. " Mrs. E. A. Church, Detroit,..... 1 00
8. Keg cider vinegar, J. Frankel, Detroit, 1st prem., ... 2 00
13. Keg cider vinegar, Wm. Peek, Detroit, 2d pre., 1 00
5. " " J. H. Button, Farmington, Dip.
29. 2 boxes crackers, J. A. Barnes, Detroit, Discretion'y.
81. 3 pumpkin pies, Miss J. W. Cushway, Hamtramck,.....Discretionary.
85. 3 loaves spring wheat bread, Mrs. J. D. Perry, Redford,.....Discretionary.
46. Isabella grape wine, J. Roberts, Detroit, "
67. Toddy whiskey, Murphy & Co., Detroit, "
61. Jar of apple sauce, Mrs. E. Perkins, Birmingham, ...Discretionary.

The Committee do not find as many entries of bread this year as last, and, taking all together, the quality is not quite as good. Mrs. C. O. Tibbits and daughter, of Plymouth, exhibited a basket of six beautiful loaves, to which was awarded the first premium, and the second was given to Mrs. J. W. Vernoy, of Detroit. A sample shown by Mrs. J. D. Perry, of Redford, made of spring wheat, was of superior quality, and the Committee recommend that a premium of two dollars be given for it. It is con-

sidered more difficult to make white bread of good consistence, out of spring wheat than winter wheat, and these loaves were well deserving the award recommended.

The young girls have done much better this year than last. There were quite a number of entries by Misses under sixteen, and most of the samples shown were of excellent quality, and very nicely made up, considering the ages of the exhibitors, which ranged from six to fifteen years. The first premium was awarded Miss T. K. Bradner, of Plymouth, and the second to Miss Gertrude Yerkes, of Northville, the one nine, and the other thirteen years of age. The Committee highly commend all the young exhibitors,, and especially admire the spirit of the two little Misses Baily, who expressed their determination to try again another year, and to keep trying until the premium loaf was secured. We hope they will practice to perfect the bread, even more than for the sake of the premiums.

But four samples of corn bread were on exhibition. Mrs. Perkins, of Birmingham, and Mrs. Button, of Farmington, had good-sized, well baked, sweet, delicious loaves, just such as would satisfy a company of hungry men and boys around a farmer's table. It was difficult to say which was best. Such bread-making is worth encouraging where hearty, growing farmer boys are to be fed.

There was but one loaf of brown bread, and one entry of rye and Indian. No preserves were entered on the book of this Committee. A premium of $1 00 was recommended to Mrs. Perkins, of Birmingham, for a jar of apple sauce. Jars of pickles, of superior quality, were exhibited by Mrs. J. T. Burchard, of Detroit; also, excellent crackers, by J. A. Barnes. The fruit wines were not generally of as pure quality or as well fermented as such wines should be, and the Committee recommend that separate premiums be offered for grape and currant wines, and that they be not required to compete with each other. A superior sample of home-made cider vinegar was exhib-

ited by J. H. Button, of Farmington, to which the Committee recommend a diploma.

Quite a novel feature in this department was the show of three immense pumpkin pies made by Mrs. J. M. Cushway, of Hamtramck. The Committee took ample opportunity of testing their quality, which was pronounced "delicious," and though no premium was offered in the list, it was recommended that an award of three dollars be made, with a view to encouraging competition in articles of this kind. These pies would suggest Thanksgiving at any time of the year.

J. B. Hanniman, of Detroit, exhibited a great variety of sausages, made up and preserved after the German method. These meats are really worthy of commendation, and for the manufacture of sandwiches nothing could be nicer than the thin delicate slices of those large well-seasoned, well-preserved ham or tongue sausages. They are just the thing for pic-nics and excursions. The Committee recommend a diploma.

Altogether the articles in this department were highly commendable, both in numbers and quality, and the Committee take pleasure in awarding premiums and praise to all deserving them.

MRS. L. B. ADAMS,
MRS. T. McCLUMPHA,
MRS. W. A. DENNISON.

DIVISION F—DOMESTIC MANUFACTURES.

CLASS I—HOME MADE.

31. Pair woolen blankets, Mrs. F. Leslie, Dearborn, 1st premium, ... $4 00
215. Pair woolen blankets, W. S. Hinchey, Marshall, 2d premium, ... 3 00
106. Pair woolen blankets, Mrs. G. Beardsley, Ceresco, 3d premium, ... 2 00

191. Ten yards woolen cloth, Mrs. A. G. Becker, Oak, 1st premium,..... $4 00
217. Ten yards woolen flannel, W. S. Hinchey, Marshall, 1st premium,..... 4 00
192. Ten yards woolen flannel, Mrs. A. G. Becker, Oak, 2d premium,..... 3 00
279. Ten yards woolen flannel, D. Woolsey, Marshall, 3d premium,..... 2 00
95. Hearth rug, Wm. Moore, Adrian, 2d prem.,. 2 00
304. Rag matt, Joseph Cook, Detroit,.....Diploma.
266. " " " .....Discretionary.
17. Woolen coverlet, Mrs. T. B. Field, Trenton, 1st premium,..... 3 00
18. Woolen coverlet, Mrs. T. B. Field, Trenton, 2d premium,..... 2 00
193. Woolen shawl, Mrs. A. G. Becker, Oak, 1st premium,..... 3 00
89. Woolen shawl, Mrs. H. Parrish, Detroit, 2d premium,..... 2 00
199. Two pair woolen stockings, Mrs. F. Stetson, Detroit, 1st premium,..... 2 00
71. Two pair woolen stockings, Mrs. E. Perkins, Birmingham, 2d premium,..... 1 00
314. Pair woolen mittens, Mrs. Samuel Parks, Dexter, 1st premium,..... 2 00
201. Pair woolen mittens, Mrs. F. Gaines, Detroit, 2d premium,..... 1 00
280. Two lbs. stocking yarn, D. Woolsey, Marshall, 1st premium,..... 2 00
297. Two lbs. stocking yarn, Wm. Moore, Adrian, Dis'ry.
296. Two lbs. stocking yarn, spun by a girl under 14 years, Miss Hadsell, Pontiac,..... 2 00
340. White bed spread, Mrs. S. H. Perkins, Manchester, 1st premium,..... 3 00
172. White bed spread, Miss Hattie Stead, Detroit, Dis.

291. Ten yards diaper, Mrs. C. Hadsell, Pontiac, 1st premium,..... $4 00
290. Ten yards tow cloth, Mrs. C. Hadsell, Pontiac, 3 00
308. Two pair knit cotton stockings, Mrs. T. Stetson, Detroit,..... 2 00
319. One pair knit linen stockings, Mrs. J. B. Bloss, Detroit,.....Diploma.
289. One pair linen thread gloves, Mrs. C. Hadsell, Pontiac, ...Diploma.
50. Best and greatest variety of articles made by any one family, and exhibited, but not containing articles, entered separately for competition, Mrs. Abigal Brink, Nankin,..... 10 00
210. Two patch-work quilts, Mrs. C. E. Lewis, Lyons,.....Discretionary.
342. Specimen of knit work, J. D. Merchant, Utica, "

M. W. QUACKENBUSH,
MRS. H. P. SLY,
MRS. J. THOMAS,
MRS. C. W. GREEN,
MRS. W. S. WILCOX.

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CLASS II—FACTORY MADE.

83 to 88. Best display of woolen goods manufactured in this State, Davis & Hebbard, Milford, 1st premium, Silver Medal and..... $5 00
144. One pair woolen blankets, Nall, Duncklee & Co., Detroit,.....Diploma.
145. Two Marseilles quilts, Nall, Duncklee & Co., Detroit, ...Diploma.
147. One pair gilt window blinds, Nall, Duncklee & Co., Detroit,.....Diploma.
148. Four pieces oil cloth, Nall, Duncklee & Co., Detroit,.....Diploma.

227. One woolen manufactured covelet, J. Allen, Plymouth, 1st premium, ... $2 00
118. Two woolen manufactured coverlets, J. Allen, Plymouth, 2d premium, ... 1 00
233. One pair woolen manufactured blankets, Mrs. T. McClumpha, Plymouth, 1st prem., Dip. & 2 00
149–50. Finest display of window curtains, E. Shepard, Detroit, 1st premium, Diploma and.... 3 00
256. Five hearth rugs, E. Shepard, Detroit,.....Diploma.
254 to 257. Best display of carpets, E. Shepard, Detroit, 1st premium, Diploma and..... 5 00
321 to 323. Best display of woolen goods manufactured out of this State, H. C. Kilborn, Detroit, 1st premium, Diploma and..... 5 00

Two very fine piano covers and one set mosaic pictures, entered in the above, are not found in the premium list, but are entitled to a favorable notice.

J. H. KAPLE,
Chairman.

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CLASS III—ARTICLES OF FURNITURE.

52. Rocking chair, Miss Sophia Smith, Detroit,. Diploma.
58. Willow rocking chair, Chas. Engle, " ... "
59. " arm gent's chair, " " ... "
60. " arm ladies' " " " ... "
61. " office basket, " " ... "
62. " bottle basket, " " ... "
63. " baby chair, high, " " ... "
64. " baby chair and table, " " ... "
65. " " small, " " ... "
66. " " colored, " " ... "
67. " " white, " " ... "
68. " baby wagon, " " ... "
102. Two coffins, F. T. Leete, Detroit,..... "
104. One chair, Mrs. H. R. Johnson, Detroit,..... "

174. Rosewood chamber set, H. Weber, Detroit, 1st premium, Diploma and..... $5 00
175. Rosewood centre table, H. Weber, Detroit, Discret'ry.
176. " sofa, H. Weber, Detroit, 1st prem., Dip.
177. " book case, " " " . $2 00
209. " extension table, H. Weber, Detroit, 1st premium,..... 2 00
179. Spring mattrass, H. Weber, Detroit,.....Diploma.
194. Spring bed, J. S. Whipple, Detroit,..... "
259. Two ottomans, Miss E. Church, Detroit,..... "
260. Display of drawing-room furniture, S. Griggs & Co., Detroit, Diploma and..... 5 00
263. One oak hall tree, S. Griggs & Co., Detroit,. Diploma.
273. One easy chair, H. Weber, Detroit,..... 2 00
320. One oval mirror, S. Griggs & Co., Detroit,. Diploma.
325. One rosewood dress bureau, J. W. Tillman, Detroit, ...Diploma.
326. One mahogany office desk, J. W. Tillman, Detroit, Diploma and..... 5 00
328. One Therapeutic chair, patent, J. W. Tillman, Detroit,.....Diploma.
334. One fancy gilt chair, J. W. Tillman, Detroit,.. "
336. Seven reception chairs, " " .. "

H. B. PHILBRICK,
Chairman.

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CLASS IV—ARTICLES OF DRESS.

1. Display of millinery, Mrs. Fanny Herchman, Detroit, ...Diploma.
180. Suit of men's clothing, Judson & Smith, Detroit, Diploma and..... 5 00
181. Dress coat, Judson & Smith,.....Diploma.
186. Two silk hats, J. T. Smith, Diploma and..... 2 00
187. Two fur hats, " " 2 00
188. Six soft hats, " .....Diploma.

189. Ladies and gent' furs, J. T. Smith,.....Diploma.
270. One case millinery, Mrs. E. James, Diploma & $5 00
153. Embroidered buckskin vest, Mrs. Joseph Piquette, L'Ance,.....Diploma.
157. Overcoat, Miss Polly Johnson, Sault Ste Marie, "

J. R. NICHOLS,
Chairman.

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CLASS V—ARTICLES OF LEATHER AND INDIA RUBBER.

22. Gent's summer boots, C. C. Tyler & Co., Det., $2 00
23. " winter " " " 2 00
25. Ladies' summer walking shoes, C. C. Tyler & Co., Detroit,..... 1 00
26. Ladies' winter shoes, C. C. Tyler & Co., Detroit, 1 00
51. Whips and lashes, 7 pieces, S. Noble, " Diploma.
57. Glass case India rubber goods, O. Bellows, Detroit,..... .....Diploma and Silver Medal.
79. One case men's custom double-soul thick boots, H. P. Baldwin & Co., Detroit,..... 2 00
80. One case do., kip boots, H. P. Baldwin & Co.,Diploma.
81. One case do., calf boots, " "
82. One case boys' kip boots, " "
140. One sole leather trunk, H. W. Coleman, Detroit, 1 00
159. One case bootlegs and gaieters upper, Dilman & Strengson, Detroit,.....Diploma.
160. Boot and shoe lasts, Geo. E. Curtis, Detroit,.. "
161. Boot and gaiter trees, " " "
162. Crimps, " " "
163. Toe-stretcher, " " "
107. Patent steel-spring horse-collar, William McK. Thornton, Detroit,..... ..... "
151 to 155. Assortment of leather trunks, Eagle & Elliott, Detroit,..... "

F. E. ELDRED,
Chairman.

CLASS VI—CARRIAGES AND BUGGIES.

98. Two-horse family top carriage, Reichle & Co., Detroit, Silver Medal and..... $4 00
119. Top buggy, Stewart Moore, Detroit,..... 3 00
120. Buggy without top, Stewart Moore, Detroit,.. 3 00
121. Trotting wagon, " " .. 3 00
122. Ten carriages and buggies, " " Diploma.
123. One-horse family carriage, " " .. 3 00
234. Section of sleeping car, with seats and couches, S. C. Case, Detroit, ...Diploma.
212. Two cutters, Austin & Tomlinson, Jackson,... "

JOHN PATTEN,
Chairman.

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CLASS VII—STOVES AND HOLLOW WARE, &C.

8. One No. 9 Economist cooking stove and furniture, C. P. Woodruff & Co., Detroit,..Silver Medal.
9. One No. 8 Economist, with sand oven, C. P. Woodruff & Co.,.....Diploma.
72. One marble mantel, Wm. Shulthies, Detroit,.. $2 00
73. One parlor grate Charles Busch,.....Diploma.
90. One Stewart's cook stove, W. H. Tefft & Co., Detroit,.....Diploma.
91. One parlor stove, (2 second leaders,) W. H. Tefft & Co.,.....Diploma.
197. Moist air furnaces for warming and ventilating houses, T. D. Ingersoll, Monroe,.....Silver Medal.
198. Chimney cap and ventilator, T. D. Ingersoll, Diploma.
298. Three marbleized stone mantels, G. F. & A. Mehling, Detroit,.....Diploma.
45. Two marble mantels, Joseph Wambeq, Detroit, Dip.

HENRY PENNOYER,
A. D. POWER,
C. E. LEWIS.

MISCELLANEOUS.

2. Richard Woodcock, Chatham, C. W., specimens of brick,.....Diploma.
3. Richard Woodcock, Chatham, specimens of Bath brick,.....Diploma.
15. Hickey & Co., Detroit, 1 pair horse shoes, with two gripes for sand cracked foot,....Diploma.
20 and 21. A. Carry, Detroit, specimens of transfer varnish, and specimens of polishing powder, ...Diploma.
34. O. Goldsmith, Detroit, case of cigars, home made,.....Diploma.
37 to 43. Farrand & Sheely, 4 platform scales, 1 wheelbarrow scale, 1 grocers' scale, 1 counter scale, 1 druggists' scale, 3 even balances, 1 chronometer scale,.....Medal.
46. Wyandotte Rolling Mills, Detroit, specimens of wrought iron,.....Medal.
54. Evans & Walker, Detroit, manufactured spices, coffee, &c.,.....Diploma.
55. J. Flowers & Bro., Detroit, display of brass work,.....Medal.
56. J. Bennet, New York City, specimens of taitors' shears,.....Diploma.
74. Newman & Co., Detroit, patent roofing,....Diploma.
78. A. Melvin, Detroit, specimen of house carving, "
109. Ocobock & Foster, Hudson, 7 sets felloes,.... "
110. " " " 1 set sulky shafts, "
111. " " " 1 set cutter stuff, "
118. J. W. Williams & Bro., Chagrin Falls, Ohio, 1 Leonard's patent seamless thimble skein,..Diploma.
124. J. F. Seymour, Adrian, Fountain Tencilling and marking brush,.....Diploma.
127. S. DeGolyer, Hudson, 15 sets hubs,.....Diploma.
128. " " " 5 sets bent shafts,.....Good.
130. " " " 1¼ inch spokes,.....Diploma.

133. C. P. Woodruff & Co., Detroit, Doles' patent saw gummer,.....Diploma.
134. C. P. Woodruff & Co., Detroit, hub boxing machine,.....Diploma.
136. H. Stewart, Detroit, 1 fancy walking stick, Discret'y.
137 to 139. A. M. Beardsley, Constantine, 1 hand-saw filing machine, 1 circular filing machine, 1 muley filing machine,.....Diploma.
168. H. A. Robison, Cleveland, O., straw bonnet preparing machine, iron and block,.....Diploma.
196. A. H. Phelps, Trenton, water cooler,.....Diploma.
202. Wm. Wingert, Detroit, one single rifle, silver mounted, double trigger,.....Diploma.
221. C. G. Pease, Concord, O., lot of turned wooden ware,.....Diploma.
225. I. J. Merritt, Detroit, lot patent augurs....Diploma.
226. " " wooden water pipe... "
221. P. G. Johnson, Greenville, Saven's patent shaft coupling,.....Diploma.
235. A. W. Copeland, Detroit, one cracker machine, "
239 to 241. I. W. Ingersoll, Detroit, lot brackets and patterns, 4 doors, 2 pair window sash, Diploma.
248. O. B. Dibble, Detroit, samples of patent mineral paint,.....Diploma.
275. Henry Fowler, 2 nests band boxes,..... "
276. H. Francisco, Battle Creek, self-registering lumber measure,..... "
294. Berry Bros., Detroit, package glue,..... "
285. Barnard & Tiffany, Detroit, Carbon illuminating oil,..... "
301. F. N. Clarke, Ypsilanti, 1 cake German chemical erasive soap, 800 lbs.,..... "
309. S. Draper, Troy, N. Y., one portable hand drill, "
310. Grant & Crossman, Detroit, 1 solar compass,..Medal.
312. Grant & Crossman, Detroit, U. S. standard guage,.....Diploma.

318. Rogers & Allen, Grand Rapids, case of dentistry, ... Diploma.
341. Geil, Harley & Siverd, Phila., county maps,... "
258. E. Shepard, Detroit, 1 fancy sign,..... "
92. Adams & Smith, Battle Creek, patent buggy hubs, ... "

M. H. GOOODRICH,
Chairman.

DIVISION G—FINE ARTS, NEEDLEWORK, &c.

CLASS I—PAINTING, STATUARY, MUSICAL INSTRUMENTS, &C.

Your Committee, having viewed the several articles included in the list furnished them by the Secretary, beg leave to report the following awards of premiums, viz :

Best collection oil paintings, shown by a resident of Michigan, J. H. Dolph, Detroit, 1st prem., Diploma and..... ..... $5 00
2d best collection of paintings shown by a resident of Michigan, Miss R. B. Norris, Ypsilanti, 2d premium,..... 3 00
104. Best painting in oil by a Michigan artist, Miss R. B. Norris, Ypsilanti,..... 5 00
119. Best original water color drawing, Mrs. S. McKnight, Detroit, 1st prem.,..... 3 00
168. Second best do., Mrs. J. H. Edmonds, Detroit, 2d prem., ... 1 00
93. Best collection of daguerreotypes, Ambrotypes, or mezzographs, Moses Sutton, Detroit, 1st premium, Diploma and..... 5 00

This was the only collection on exhibition, and the committee considered the collection well worthy a first premium.

Best design for farm houses and buildings, with description, estimates, &c.,.....

Your committee regret to find no entries under this head, as it is a matter of such general interest among our farmers. There are on exhibition three architectural drawings, exhibited by Mr. S. Smith, of Detroit, No. 151, upon which a discretionary premium is recommended.

In statuary, your Committee saw nothing on exhibition worthy of a first premium, and award the second premium to J. Melcher, Detroit, for collection No. 30, Diploma.

28. Best specimen of ornamental penmanship, Leonard Lawrence, Detroit,.....Diploma.

143. Best specimen bookbinding, F. Raymond & Co., Detroit,.....Silver Medal.

177. Best specimen of sign painting, Robert Hopkins, Detroit,.....Diploma.

MUSICAL INSTRUMENTS.

32. Best grand piano, 7⅓ octave, manufactured by Boardman, Gray & Co., Albany, A. Couse, Detroit, Diploma and..... $5 00

37. Best parlor piano, square, 7⅓ octave, manufactured by Light & Bradbury, N. Y., A. Couse, Detroit, Diploma and..... 5 00

57. Best melodeon, manufactured by Smith, of Boston, Staring & Whitemore, Detroit, Dip. and 3 00

SEWING MACHINES.

6. Best and most elegant specimen of sewing machines, Wheeler & Wilson's, L. D. & H. C. Griggs, Detroit, Diploma and..... 3 00

91. Best and cheapest family sewing machine, Howe's Improved, Eagle & Elliott, Dip. and 2 00

There were a number of excellent and valuable machines upon the ground, which are deserving of notice; and among them Singer's machines, exhibited by Mr. Wm. Porter, and Holley's family sewing machines, exhibited by Wm. H. Wiswell. The last named machine is of a recent patent.

CLOCKS, JEWELRY, &C.

69. Best barometer, J. Kedzie, Rochester, N. Y., Diploma.
Best thermometer, " " " "

There were a large number of articles on the list submitted to us for inspection, for which no premium is offered; many of these articles have much merit, and do great credit to the artists exhibiting them, and we should feel that our whole duty was not performed should we pass them by silently.

Among these articles are two cases of lapidarian work, exhibited by Anthony Pohl, of Detroit, in which we find very many beautifully cut stones, natives of our own State, and which will compare favorably with some of the precious stones of the east. Discretionary premium recommended—$5 00.

One case hair jewelry, exhibited by F. Rholsom, of Detroit. Discretionary premium recommended—Diploma.

One specimen of wood-carving by S. Melchor, Detroit. Discretionary premium recommended.

We found some specimens of graining exhibited by W. Wright, Detroit, which deserve especial notice, and we recommend a discretionary premium—Diploma.

There is a variety of pencil drawings and crayon sketches on exhibition, which adds largely to the adornment of Floral Hall, and which evidence much artistic skill in the exhibition, but the committee do not deem it necessary to particularize.

All of which is respectfully submitted.

JNO. G. PARKHURST,
Chairman.

CLASS II—NEEDLE, SHELL, WAX AND OTHER FANCY WORK.

Of the Committee on Division G, Class 2, but two appeared, to act according to appoiment. Mr. Hart, of Lapeer, and Mr. Mitchell, of Port Huron, kindly volunteered

their services. The Chairman most gladly accepting their offers, immediately commenced the work of examining the various articles; this they found to be a difficult matter, owing to the manner in which the articles were arranged, they being distributed in different parts of two buildings; also many articles upon our list were entered in wrong Divisions, as well as wrong Classes. Therefore, if it should seem that we have given more premiums than our book of directions allow, or if we have formed new classes of work, let this be our excuse, that when we found many articles deserving of awards, but no mention made of such articles, we felt we could not do otherwise than give. But all this, of course, we humbly submit to the Executive Committee, trusting they will pardon us if we have done wrong or erred in discharge of our duty.

We have first upon our list several specimens of ornamental confectionary exhibited by E. Borchard, of Detroit, certainly deserving of notice, and we recommend a Diploma.

157. Ornamental needle work, Miss E. A. Church, Detroit, 1st premium, Diploma and..... $2 00
48. Ornamental needle work, Miss M. Jenny Hall, Milford, 2d prem.,..... 1 00
86. Silk embroidery, Mrs. C. C. Blodget, Detroit, Diploma and..... 1 00
156. Silk embroidery, Miss E. A. Church, Detroit, 2d prem., ... 1 00
185. Silk work, N. K. Turner, Ypsilanti,...Discretionary.
193. Silk work, Miss F. Wisner, Pontiac,..... "
84. Table cover, Mrs. J. Stearenger, Detroit, 1st premium, Diploma and 2 00
10. Table cover, Mrs. E. Richters, Detroit, 2d premium,..... 1 00
170. Ottoman, (tufted,) I. S. Kellum, Detroit, 1st premium, Diploma and..... 2 00
181. Ottoman, (tufted.) I. Crary, Detroit, 2d prem., 1 00

64. German work, A. Pixley, Detroit, 1st prem., . Discr'ry.
65. German work, Miss Berry, Detroit, 2d prem.,. "
169. Chenille work, Miss A. Chase, Detroit,..... "
40. Crochet shawl, Mrs. A. Briscoe, Detroit, Diploma and..... 2 00
192. Crochet shawl, Miss F. Wisner, Pontiac,..... 1 00
124. Crochet chair cover, Mrs. Stetson, Detroit, Diploma and..... 2 00
120. Crochet chair cover, I. Wilcox, Livonia Centre, 1 00
127. Lamp mats, Miss F. E. Williams, Port Huron, Diploma and..... 2 00
291. Lamp mats, Miss Fanny Wisner, Pontiac,.... 1 00
181. Worsted design, Miss C. Lanigan, Detroit, Diploma and..... 2 00
96. Worsted design, Miss J. Lanigan, Detroit,.... 1 00
171. Worsted Berlin work, Mrs. I. S. Kellum, Detroit,.....Discretionary.
186. Worsted Berlin work, Mrs. N. K. Turner, Ypsilanti,..... "
173. Lace embroidery, Mrs. S. Parks, Detroit, Diploma and..... 2 00
100. Lace embroidery, Miss C. Hinsdell, Detroit,.. 1 00
59. Hair work, Miss Eliza Campbell, Bellville, Diploma and..... 2 00
15. Hair work, Miss Theresa Parent, Detroit,.... 1 00
140. " Mrs. C. H. Benedict, Detroit,..Diploma.
111. Wax flowers, Miss Bollo, Detroit, Diploma and 2 00
183. Wax work fruit, Miss Mary A. Allen, Grand Rapids, Diploma and..... 2 00
110. Wax work fruit, Miss Bollo, Detroit,..... 1 00
60. Leather work, Miss E. Campbell, Bellville, Diploma and..... 2 00
85. Leather work, Mrs. W. Throop, Detroit,..... 1 00
12. Plain sewing by girl eleven years old, Miss E. Balls, Greenfield, Diploma and..... 3 00

11. Darned stockings, Mrs. Balls, Greenfield, Diploma and..... $2 00
154. Knit hood, E. Pistorias, Detroit, Diploma and 2 00
101. " Mrs. E. W. Flint, Detroit,..... 1 00
141. Ornamental bead work, A. Douglass, Detroit,. Dis.
167. " " " Mrs. Antonette, " . "
81. Knit lace, Miss E. A. Church, " . "
66. One vase spice, Miss E. Keusch, " . "
45. Shell basket, Mrs. O. Macy, " . "
46. Cone frame, Mrs. O. Macy, " . "
139. Afgran or carriage blanket, Mrs. Larned, " . "
106. " " Mrs. J. M. Howard, " . "
115. Embroidered skirt, Mrs. J. F. Terry, " . "
160. Baby's blanket, Mrs. Merritt, " . "
117. Heavy worked skirt, Miss Eliza Mead, " . "
162. " " Miss Mary Lawrence, " . "
155. Stamped embroidery, Mrs. Bartholomew, " . "
83. Knit shawl, Mrs. Stearinger, " . "
107. " Mrs. J. M. Howard, " . "

Very many articles are worthy of notice, particularly certain framed pieces, among others, "The Young Christ and Samaritan Woman." A very beautiful pair of velvet slippers embroidered with chenille, exhibited by Mrs Morphy, and deserving of notice, and would have been entitled to a premium if competing. A work bag was also deserving of notice, together with many other articles too numerous to mention.

MRS. M. H. WEBSTER,
Chairman.

DIVISION H—FRUITS AND FLOWERS.

CLASS I—FLOWERS—PROFESSIONAL.

1. Best and greatest variety of flowers, skillfully grouped, Hubbard & Davis, Detroit,..... $3 00

97. Best and greatest variety of roses, Wm. Adair, Detroit,..... $3 00
3. Best and greatest variety of dahlias, Hubbard, & Davis, Detroit,..... 3 00
120. Best 12 dissimilar blooms of dahlias, John Ford, Detroit,..... 2 00
121. Best collection and display of German asters, John Ford,..... 2 00
351. Best and greatest variety of phloxes, W. Adair, 3 00
7. Best seedling phlox, Hubbard & Davis,..... 2 00
232. Best and greatest variety of verbenas, J. Pugh, Detroit, 1st prem., ... 2 00
6. Best seedling verbena, Hubbard & Davis,.... 2 00
121. Best and greatest variety of hardy annuals in bloom, John Ford, ... 3 00
12. Best round bouquet, Hubbard & Davis,..... 1 00
12. Best flat bouquet, Hubbard & Davis,..... 1 00
329. Best basket of flowers tastefully arranged, J. T. Wilson, Jackson..... 2 00

B. HUBBARD,
Chairman.

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CLASS II—FLOWERS—AMATEUR.

529. Best and greatest variety of green house plants, Mrs. Bela Hubbard, Detroit, 1st prem.,..... $5.00
115. 2d best do., Theo. Henrich, Detroit, 2d prem., 3 00
435. Best and greatest variety of roses, B. McCreary, Detroit,..... 3 00
391. Best and greatest variety of dahlias, E. F. Haskell, Monroe,..... 3 00
369. Best collection and display of German asters, Mrs. A. C. Sherwood, Grosse Point,..... 2 00
370. Best and greatest variety of phloxes, Mrs. A. C. Sherwood, Grosse Point,..... 3 00
371. Best seedling phlox, Mrs. A. C. Sherwood,... 2 00

232. Best and greatest variety of verbenas. All on exhibition were so much wilted as to render it impossible to determine their value.

390. Best seedling verbena, Mrs. E. F. Haskell, Monroe,..... $2 00

386. Best and greatest variety of hardy annuals in bloom, Mrs. E. F. Haskell, Monroe, ... 3 00

382. Best floral design, Miss Bowerman, Detroit, 1st premium,..... 2 00

375. 2d best do,, Hogg, Detroit, 2d prem., ... 1 00

479. Best round bouquet, Mrs. A. Bradner, Plymouth, 1 00

169. Best basket of flowers tastefully arranged, Mrs. Sarah Ford, Detroit,..... 2 00

2d best do., Mrs. A. Bradner, 2d prem., ... 1 00

459. Best flat bouquet, Mrs. Stead, Det.,..... 1 00

The Committee recommend the following as worthy of discretionary premiums, there being none named in the list under which they can be classed:

A fine collection of petunias in pots, pampas grass and other plants: to J. T. Wilson.

A Delphinum formosum and several other plants of foreign origin: to George Taylor.

Trellis of flowers on trained wires and in pots, very pretty and hardy: to Thomas Henrich.

Variety of petunias and other cut flowers, well arranged: to Mrs. W. Balls.

A rose geranium one year old from the slip, very large; to Mrs. L. H. Cobb.

The Committee in Division H, report, that the display of cut flowers was large, including a good variety of such as belong to open air culture. But of greenhouse plants or flowers very few were on exhibition. The cause of this is understood to be the almost certain injury and often ruin of the plants from removal, and more especially from being handled by visitors. No probable amount of premiums will cover the loss occasioned by the thoughtless curiosity

of the throng of visitors, who are ignorant of the value and delicacy of a rare hot-house plant. It is much to be wished that such ample protection could be provided as would offer inducements for the exhibition of rare and and delicate plants.

In Class 1, or Professional List, no premiums were awarded for greenhouse plants, as none were exhibited. In the Amateur List, two premiums only were awarded.

Respectfully submitted.

BELA HUBBARD,
MRS. GEO. WISNER,
MRS. JOHN PALMER,
MRS. HENRY A. WIGHT.

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CLASS III—APPLES—AMATEUR.

Your Committee, in making the following awards, have been governed by a desire to do justice to the numerous exhibitors in this department; and from the uncommon excellence of all the samples, we have experienced much difficulty in determining in some instances which specimens were entitled to the preference; and it would afford us much pleasure to give the names of all exhibitors, and assign to each his proper merits—but this we cannot do. We have awarded as follows:

Best and greatest number of choice varieties, Mead & Groat, Niles, 1st prem., ... $5 00

Greatest number of choice varieties, Best & Allen, Plymouth, 2d prem., ... 3 00

Exhibit of autumn apples, W. S. Carr, Manchester, 1st prem., ... 4 00

Exhibit of autumn apples, H. Bradley, Northville, 2d prem., ... 2 00

Exhibit of winter apples, D. Power, Farmington, 1st prem., ... 4 00

Exhibit of winter apples, M. Drake, Franklin, 2d prem., ... 2 00

Twelve specimens of summer apple, single variety, D. Woolsey, Marshall, 1st prem., ... 2 00

Twelve specimens do., Z. Lloyd, Plymouth, 2d premium,..... 1 00

" specimens autumn apples, J. F. Perrin, Nankin, 1st prem.,..... 2 00

" do., H. B. Sunbury, Troy, 2d prem.,..... 1 00

" specimens winter apples, N. C. Dayton, Adrian, 1st prem.,..... 2 00

" do., J. F. Perrin, 2d prem.,..... 1 00

Seedling summer apples, D. Woolsey, Marshall, 1st prem.....Downing.

" autumn do., H. Bradley, Northville,. Land. Gardening.

" winter do., D. Woolsey, Marshall,.....Darlington.

Best and greatest variety of table apples, J. Allen, Plymouth, 1st prem.,.....Barry.

Best and greatest variety of table apples, H. Bradley, Northville, 2d prem.,.....Field's.

H. F. BAKER,
T. T. LYON,
DAN'L L. PRATT.

CLASS III—PEARS—AMATEUR.

Greatest variety of pears, named and labeled, B. McCreary, Detroit, 1st prem.,..... $5 00

Greatest variety of pears, named and labeled, John Roberts, Detroit, 2d prem.,..... 3 00

Collection of Autumn pears, N. Bour, Detroit, 1st prem., ... 3 00

Collection of Autumn pears, M. H. Hunter, Grosse Isle, 2d prem.,..... 2 00

Six specimens of well grown Autumn pears, W. Sewersby, Detroit,..... 1 00

M. H. HUNTER, *Chairman.*

CLASS IV—PEACHES, PLUMS, AND OTHER FRUIT.

Plums and Quinces.

Best 12 plums, E. K. Gillert, Detroit,..... $2 00
Best 12 quinces, H. B. Sunbury, Troy, 1st prem.,.. 3 00
" " Mrs. E. F. Haskell, Monroe, 2d prem.,..... 2 00
Best 12 quinces, Mrs. G. Beardsley, Ceresco, 3d prem.,..... 1 00

Grapes.

Best collection native grapes grown in open air, Mrs. E. F. Haskell, Monroe, 1st prem.,..... 3 00
Best collection of grapes grown in open air, P. Parsons, Detroit, 2d prem.,..... 2 00
Best collection of foreign grapes grown in open air, N. Bour, Detroit,..... 3 00
Best collection of foreign grapes grown under glass, John Roberts, Detroit,..... 3 00
One plate Isabella grapes, S. Smith, Detroit,..Discretion'y.

Watermelons.

Best specimen watermelon, S. Smith, Detroit, 1st prem.,..... $2 00
Best specimen watermelon, Hubbard & Davis, Detroit, 2d prem.,..... 1 00

Nutmeg Melons.

Best 4 nutmeg melons, A. Thoor, Detroit,..... 2 00

The Committee found no peaches or muskmelons entered for competition.

S. O. KNAPP,
Chairman.

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CLASS V—APPLES—PROFESSIONAL.

The Committee upon the Professional list of Apples, found, on examination, that their duties were very light.

In this Class the exhibitors were few, the competition none, and the display most unsatisfactory, for a State so renowned for its fruit as Michigan. It is believed to have been excelled at many of our county fairs. This is the result of mere neglect on the part of our professional cultivators in exhibiting their fruit, and we trust they will not leave themselves again open to like criticism.

T. T. Lyon, Esq., of Plymouth, Wayne county, exhibited a collection of Winter Apples, a collection of Autumn Apples, and three lots of Winter Apples of twelve varieties each.

This fruit was very much the best of this class exhibited. It would in each instance have been entitled to the award of *first* premium, had it been entered for competition; but this gentleman being the Superintendent of fruits and flowers, from a feeling of delicacy refused to allow this fruit to be entered for competition. The Committee are therefore restricted to this complimentary notice so well deserved by this accomplished pomologist.

There was no collection of Winter or Summer Apples entered for competition, which, in the judgment of your Committee deserves a first premium. They do not, therefore, award any.

They award premiums as follows:

For the best and greatest variety of good winter apples, Hubbard & Davis, Detroit.

For the best and greatest variety of good autumn apples, Hubbard & Davis, Detroit.

For the best and greatest variety of good summer apples, Hubbard & Davis, Detroit.

For best twelve specimens of winter apples, single variety, G. W. Taylor, of Kalamazoo.

For best twelve specimens of Autumn apples, single variety, G. W. Taylor, of Kalamazoo.

The above are the only awards we can make.

James Dougall, of Windsor, C. W., exhibited a hand-

some collection of the newer and rarer verieties of apples, well worthy of a complimentary notice. It did not, however, fall within our jurisdiction to award a premium.

G. V. N. LOTHROP,
Chairman.

CLASS VI—PEARS—PROFESSIONAL.

Best and greatest variety of pears, named and labeled, and grown by exhibitor, James Dougall, Windsor, C. W., 1st prem.,	$4 00
Do., of pears, Wm. Adair, Detroit, 2d prem.,	3 00
Best collection of Autumn pears, named, labeled, &c., T. T. Lyon, Plymouth, 1st prem.,	3 00
Do., Hubbard & Davis, Detroit, 2d prem.,	2 00
Best 6 specimens of well grown Autumn pears, Wm. Adair, Detroit, 1st prem.,	1 00
Do., T. T. Lyon, Plymouth, 2d prem.,	Discretionary.

M. H. HUNTER,
Chairman.

CLASS VII—PEACHES, PLUMS, AND OTHER FRUIT—PROFESSIONAL.

No entries under this list.

CLASS VIII—VEGETABLES.

Greatest variety culinary vegetables, John Ford, Detroit, 1st prem.,	$4 00
Do., Hubbard & Davis, Detroit, 2d prem.,	2 00
Yellow onions, Sanilac County Agricultural Society, Lexington,	2 00
White Onions, Wm. Adair, Detroit,	2 00
Large red onions, J. F. Perrin, Nankin,	2 00
Apple tomatoes, O. B. Dibble & Son, Detroit,	1 00
Six stalks rhubarb, Wm. Adair, Detroit,	1 00
One peck sweet potatoes, " "	1 00

Vegetable eggs, John Ford, Detroit,	$2 00
Crookneck squash, " "	1 00
Rutabaga turnips, Wm. Beach, Greenfield,	1 00
Cauliflower, Fred Watz, Detroit,	2 00
Five varieties roots for cattle, D. Clarkson, Northville,	4 00
Seedling potatoes, D. Clarkson, Northville,	1 00
Table " " "	2 00
Tremont golden mammoth squash, best, O. B. Dibble & Son, Detroit,	1 00
Six heads cabbage, S. Marx, Detroit,	2 00
Six white turnips, " "	1 00
Twelve parsnips, Fred Watz, "	2 00
Twelve carrots, " "	2 00
Winter squash, P. Parsons, "	1 00
Vegetable marrow squash, S. Wilson, Hamtramck,	1 00
Half-peck Lima beans, J. P. Whiting, Detroit,	1 00
Twelve turnip-rooted beets, A. Thoos, "	2 00
Twelve blood beets, John Linn, "	2 00
One peck (Tartar) potatoes, Z. Lloyd, Plymouth,	1 00
Washtenaw seedling potatoes, E. C. Roberts, Salem,	2 00

The card to the twelve best stalks of celery was gone, and therefore no premium was awarded.

O. R. PATTENGELL,
Chairman.

GENERAL REPORT ON THE EXHIBITION OF FRUIT.

BY THE SUPERINTENDENT, T. T. LYON.

As might have been anticipated, the show of fruits, at the recent Fair, was one of which the State may well be proud. Owing to the peculiarity of the season, and the fact that this is not the regular bearing year of most orchards, many varieties, especially of apples, have failed to fruit; and the display was, therefore, limited in number

of varieties. The display of varieties was, also, still farther limited, on account of the very late season at which the Fair was held; which amounted to a practical prohibition upon the display of summer fruits; very few of which were exhibited; only four premiums having been awarded to apples of this class. Aside from these drawbacks, the display has, perhaps, not been exceeded in the size, fairness and beauty of the specimens, by any previous exhibition of the Society.

Among apples, by far the finest display was by Mead & Groat, of Niles. This collection embraced the most of our finest autumn and winter varieties, which, with rare exceptions, were exceedingly well grown; evidently under the eye of an intelligent and careful pomologist; although, as is common to most western collections, it was not without glaring errors of nomenclature. In it were also contained many local, rejected, or worthless varieties. It is difficult to imagine what could lead a mere amateur to the making up of such a collection; and the propriety of entering it in this class may be questionable, as, according to the practice of the Society, the testing of varieties on so large a scale might stamp the collection as professional.

The collections of Messrs. Allen, Power, Carr, Bradley and Drake, were also beautifully grown, and composed, chiefly, of well known, standard varieties; differing from the preceding less in the fineness of the specimens, than in the number of kinds exhibited. A collection by J. F. Perrin, of Nankin, was also worthy of note, although many of the kinds were of only local notoriety, and some of them not true to name. This collection made a fine appearance, from the fact that a dish of three specimens, and another of twelve, of nearly, or quite every variety shown, were placed upon the tables. From a misapprehension on the part of the exhibitor, each dish or lot of specimens

was separately entered, much to the embarrassment of clerks and judges.

Among strictly professional growers, the show of apples was very meagre; and, if we except a few very fine specimens shown by Geo. F. Taylor, of Kalamazoo, the total display, in this class, might have been beaten by a selection from the windfalls of an ordinary farmer's orchard. This is not as it should be. Our nurserymen seem not to be aware of the real effect such a show must, necessarily, have upon their reputation as producers of trees.

The show of pears, in the professional class, was decidedly more full and creditable, although, even here, so far as the comparison held, the amateurs were most decidedly in advance. The collection of James Dougall, of Windsor, C. W., was very extensive, embracing a large share of our standard varieties, together with many of the novelties of the day, among which Beurre Clairgeau was especially noticeable, from its fine size and great beauty.

The collections of Wm. Adair, and Hubbard & Davis, also embraced many of our most valuable kinds, some of which were very fine; but, although grown by *nurserymen*, the fruits of this entire class needed more *nursing* to bring them up to a reputable standard.

The show of pears in the amateur department was mostly limited to White Doyenne, Duchesse d'Angouleme, Seckel and Glout Mocreau; of which, the second was shown, in different collections, as Washington, Winter Nelis, and several other names. Some of the specimens of this variety were of almost fabulous size. Specimens of Seckel, shown by Rev. Mr. Hunter, of Grosse Isle, were fully double the size of this variety as usually grown, and probably escaped a premium, from the fact that Mr. H. was himself a member of the committee upon this class. Some specimens of this variety, grown by this gentleman, the present season, were, by actual measurement, fully eight inches in circumference.

If we consider the difficulties of the season, the display of native grapes was tolerable in quality, though very limited in quantity; and chiefly from city growers. Of foreign grapes, grown under glass, the display of Mr. John Roberts was exceedingly fine. A tolerable show of foreign grapes, grown in the open air, by N. Bour, of Detroit, took the first premium in its class. The reasons for offering such a premium are, to the writer, inexplicable; as it is a fact arrived at by the most thorough and expensive experiments, that the foreign grape will succeed in the open air, only in certain favored localities; or possibly, with a favorable exposure, in sheltered city gardens. Mr. Dougall showed a large variety of foreign kinds, the produce of young plants not yet fully established. Mr. D. also showed a dish of Coe's Golden Drop Plums, which, with a dish of Yellow Egg Plums, exhibited by E. K. Gilbert, of Detroit, were the only specimens of this fruit on exhibition.

Of Quinces, but few were shown; some of them were fine, but hardly equal to the exhibitions at previous fairs.

Of Peaches, none were shown; probably from the fact that most of the finer varieties were out of season.

The writer is unable to speak of the show of vegetables, &c., as his duties, as Superintendent of Fruits, left him not even time for a glance at this department.

DIVISION I.—GRAIN, FLOUR, MEAL, SEEDS.

1 bushels peas, Fayette County Agricultural Society, Lexington,.....

2 bushels peas, Thomas A. Parker, Detroit,.....

1 " yellow corn, M. Drake, Franklin,..... $2 00

2 " " " J. Allen, Plymouth,..... 1 00

3 " four-rowed barley, D. Conradt, Roseo,.. 3 00

3 " white corn, J. S. Tibbits, Plymouth,.. 2 00

2 bushel	white beans,	J. S. Tibbitts, Plymouth,	$2 00
2 "	Poland oats,	D. Power, Farmington,	2 00
2½ "	black cluster oats,	D. Baxter, Trenton,	1 00
2 "	Poland beans,	David Coonradt, Parma,	Dis.
2 "	buckwheat,	Francis Leslie, Dearborn,	2 00
2 "	"	Thos. A. Parker, Detroit,	
2 "	white rye,	R. L. Compton, Dearborn	2 00
2 "	black rye,	George Ford, "	1 00
1 barrel flour,		A. W. Leggett, Dayton Plains, Dip. &	3 00
1 bag clover seed,		W. S. Penfield, Detroit,	
1 bag timothy seed,		" " "	
2 bushels spring wheat,		J. D. Perry, Redford,	1 00
2 "	"	O. R. Pattengell, Canton,	

The Committee would call the attention of the Executive Committee to a superior article of winter wheat exhibited by Mr. Isaac Leuty, as agent of the Sanilac Co. Agricultural Society—well worthy of notice as the best specimen on exhibition, but for want of proper and timely information the quantity was not such as is required by the list of premiums.

There was also on exhibition a superior specimen of oats and peas from said county.

R. H. CRAMPTON,
Chairman.

DIVISION K.—MISCELLANEOUS ARTICLES.

CLASS ONE.

The Committee on Class one, Division K. beg leave to report as follows:

A vertical steam engine (condensing) at the machine shop of Jackson & Wiley, Detroit. This is a machine of superior design and workmanship, and deserving of a more extended notice than your Committee can give it. We would desire all admirers of fine machinery to examine it. The

Committee] award this machine the highest premium in their power to give, a Diploma.

Wilder's Patent Clapboard and Planing Machine, which your Committee consider a decided improvement (in its combinations) on anything that has been brought under their notice—Diploma.

A one horse power steam engine—a very neatly proportioned model, exhibiting much mechanical skill in its construction.

Bachelder's Patent Lath Sawing Machine. This Machine is ingeniously constructed, and useful for sawing lath, handles, strips, &c.; Diploma.

Vandewalker's Improved French Turbine Water Wheel.

American Turbine Water Wheel.

Cushing's Patent Centre discharging Water Wheel.

Your Committee after a careful examination of the foregoing Water Wheels award a Diploma to the American Turbine Water Wheel.

A modle of a Stone Dresser invented by McNish & Butler, of Lowell, Mass. This is a very complete and ingenious machine and does its work well; Diploma.

A Portable Traveling Circular Saw. This machine for simplicity, and economy in original cost and working is a decided success; Diploma.

Specimens of Car Wheels, Gas and Water Pipe, exhibited by A. Johnson, of Detroit, and manufactured from Lake Superior Iron Ore at the Works of G. B. Russell & Co.

The above specimens are very superior of the kind and show conclusively that Michigan can compete with the world in the manufacture of her ores; Diploma.

Edward's Circular Guage Shingle Machine.

Day's Shingle Machine.

The Committee award a Diploma to Day's Machine.

Specimens of hammered and welded boiler iron plates, by the Cleveland Boiler Plate Company. These speci-

mens show the iron to be remarkably well worked and free from imperfections; Diploma.

Cook's Portable Sugar Evaporator. Your Committee deem this evaporator as worthy of a special notice, and do recommend it to all growers of Sorghum, because it brings it within the power of every grower to manufacture his own sweets; Silver Medal.

Two boats and a boat wagon exhibited by H. Foster, of Jackson. These boats are neatly built and have an improved tiller arrangement.

A Lath Mill and a Bolting Mill exhibited by Blakie & Clark, of St. Clair. These mills are worthy the notice of manufacturers of Lumber; Diploma.

One first class Side Stroke Fire Engine, manufactured by W. Jeffreys & Co., Pantucket, R. I., and exhibited by Continental Fire Company No. 8, Detroit. This is a most beautiful piece of workmanship, combining all qualities desirable in a Fire Engine; strength of build, beauty of finish, and being quickly put into service; Diploma.

Dustin's Patent Low Water Alarm. A very ingenious and undoubtedly effective instrument for preventing boiler explosions from low water; Diploma.

Single and three throw railroad switch, exhibited by the Detroit & Milwaukee Railway Co. This switch, combining, as it does, the strength of four rails instead of two, as is usual, together with the working of signals, the target by day, and the red and white lights by night, we consider the best thing of the kind we have ever seen, and recommend a silver medal.

The Michigan Central Railroad, the Michigan Southern Railroad, and the Detroit and Milwaukee Railway, each exhibited specimens of their rolling stock, all of which are deserving of the most favorable notice. Your committee, however, being confined in their duties to the list of premiums offered, have made the following awards:

For the best passenger locomotive, made in Michigan

workshops, to the Michigan Southern Railroad. (The committee decided in favor of outside connections.) Silver Medal.

For the best and most commodious railroad car, the manufacture of Michigan workshops, the committee see but slight difference in workmanship of either, but the Michigan Southern, being the most commodious, is awarded the premium; silver medal.

For the best and most commodious sleeping car, of Michigan manufacture, the committee award to the Michigan Central Railroad the premium; a silver medal.

For the best car for the transportation of live stock, of Michigan manufacture, the committee award to the Michigan Central Railroad the first premium; a silver medal.

For the best freight car for general use, the Michigan Southern road; silver medal.

The committee, desirous of showing their appreciation of each improvement that has been brought under their notice, award to the Michigan Central Railroad, for a drovers' sleeping car, a silver medal.

All of which is respectfully submitted.

J. J. NEWELL,
B. BRISCOE,
W. J. WALLACE,
B. VERNOR.

CLASS II.

Lillie's combination safe and lock, exhibited by S. R. Woolsey, of Detroit, present advantages which cannot be excelled by any other manufacture of the kind, and are believed to be, as claimed by the manufacturer, burglar proof under all ordinary circumstances. These articles are, in the opinion of the committee, entitled to the commendation of, and diploma from the Society.

The staves and machine exhibited by E. F. Gould, of Oswego, N. Y., are improvements which may challenge competition from any quarter, in the quality of the manufactured article, and should receive the approval of the Society.

Hovey & Co., and S. Wood & Co., of Grand Rapids, Mich., exhibit a very fine and pure sample of Grand River plaster, ground and unground. The quality of this plaster is too well understood by the people of Michigan to require any extended notice from the committee. The plaster for land and the calcined, appear to have been equally well prepared by both of the above firms. A more careful selection of the white stone by S. Wood & Co., gave their calcined plaster a purer white, in the sample on exhibition. The samples of stone exhibited by Hovey & Co., both rough and polished, are of the very best quality, and entitled to all the commendation which it is possible to bestow. The committee would recommend that a liberal premium be awarded these exhibitors.

The samples of plaster exhibited by J. B. Hinchman, of Detroit, are of good quality, and entitled to the same notice.

The pig iron exhibited by A. A. Rabineau, of Detroit, is of superior quality, and justly entitled to the favorable notice of the Society.

The shingle machine exhibited by Augustus Day, of Detroit, undoubtedly makes a better shingle than any other machine, and as the shingle is made at one operation, and when made is equal in quality to the best hand-made shingle, the committee are of opinion that the first premium on shingles should be awarded to Mr. Day.

King & Bro., of West Andover, O., exhibits a specimen of ornamental fence, which possesses the advantages of beauty, economy and durability combined, and should be awarded a diploma.

The specimen of iron fence exhibited by Jackson & Wi-

ley, of Detroit, is of superior workmanship and may also claim a diploma.

Some very fine samples of boiler plate from Lake Superior iron are exhibited by the Cleveland Boiler Plate Company, and if within the rules of the Society, should be awarded a premium.

Francis N. Clark, of Ypsilanti, exhibits a very fine sample of German Chemical Erasive soap, believed by the committee to be a superior article, and entitled to a diploma and the first premium, if within the class entitled to a premium by the Society.

J. M. EDMUNDS,
Chairman.

REPORTS OF CROPS.

Crops Grown by Simeon Davidson, of Tecumseh, Lenawee County.

ONE ACRE OF CLOVER SEED.

The second year after seeding, the seed was harvested. The soil was a gravelly loam, on which was put a top dressing last spring, consisting of one peck of plaster and three pecks of unleached ashes to the acre. The crop was cut for hay June 25th, and the yield was two tons per acre. About the middle of September it was cut for seed, and threshed with Clover Mill, last week in September. The yield of clean seed was three bushels and fifty-nine pounds. The produce and cost of acre was as follows:

Produce.

Clover seed, at $4,50 per bushel,		$17 92
Hay, two tons, at $6 per ton,		12 00
		$29 92

Expense.

Top dressing,	$1 00	
Cutting and gathering,	1 50	
Threshing Clover Seed,	4 00	
Use of land,	3 00	
		$ 9 50
Net proceeds of acre,		$20 42

ONE ACRE OF OATS.

Soil was black sandy loam; plowed in March, and rolled and harrowed twice before sowing. Sowed the oats broad-

cast 20th of April, 1859, at the rate of two bushels of seed to the acre, mostly white Oregon Oats mixed with Poland. Harvested July 15th, the yield being 55 bushels.

Produce.

55 bushels of Oats, worth 31 cents,.....		$17 05
Straw worth,.....		3 00
		$20 05

Expense.

Preparing ground and putting in seed,.....	$3 50	
2 bushels of seed,.....	80	
Harvesting and threshing,.....	3 00	
Use of ground,.....	2 50	
		$ 9 80
Nett proceeds,.....		$10 25

Five acres of Oats, on the same kind of soil, and expense per acre same as above, being the same seed, and same field, with culture and harvesting the same; yielded 260 bushels, sold at 31 cents per bushel,.....	$80 60
Straw,.....	15 00
	$95 60
Expense of culture and harvesting, $9 80 per acre,.....	$49 50
	$46 10
Nett Proceeds,.....	$46 10

ONE ACRE OF POTATOES.

The soil was a black loam, somewhat sandy; ground had been lying in sward for five years; had been new timbered land, and had never borne a cultivated crop before. Plowed with two yoke of oxen eight inches deep about the first of May, 1859. Harrowed four times, furrowed each way three feet apart; planted by hand—whole potatoes—

one potatoe in each hill, about the 25th of May. Varieties Long Pink Eyes and Mechannocks. Cultivated twice with cultivator in June. Ploughed with corn plow both ways, throwing the dirt toward the hill, and dressed with a hoe in July. Gathered the crop about the middle of October, the yield being two hundred and fifty bushels, worth twenty-five cents per bushel,.....$62 50

Expenses.

Ploughing,	$2 50	
Harrowing,	1 50	
Furrowing out,	0 75	
Seed, 12 bushels at 50 cents,	6 00	
Planting,	2 00	
Cultivating,	1 50	
Ploughing and hoeing,	3 00	
Digging and gathering,	7 00	
Use of ground,	3 00	
		$27 25
Nett proceeds,		$34 25

All of the above crops were raised by me on my homestead farm in the town of Tecumseh, County of Lenawee, and State of Michigan.

SIMEON DAVIDSON.

Tecumseh, December 30, 1859.

State of Michigan, Lenawee County, ss.

Simeon Davidson being by me duly sworn, says that he has read the above and foregoing statements of crops by him made and subscribed, and knows the contents of the same, and that the same are true according to his best knowledge and belief.

SIMEON DAVIDSON.

Subscribed and sworn before me this, 30th day of December, 1859.

BENJAMIN L. BAXTER,
Notary Public, Lenawee Co.

DESCRIPTION AND COST OF DRAINAGE,

PERFORMED BY JOHN ALLEN, OF PLYMOUTH,

And to which a Silver Cup was awarded for best Drained Field, in 1869.

The field, of which a plan of the drainage is herewith submitted, was originally a mucky and springy swale, of which the northerly portion especially, was extremely miry and springy, not only along its borders but also apparently beneath many portions of its surface. Subsoil, marl and quicksand.

The field embraces about six (6) acres and has been cleared of timber about twenty-five years, during which time it has produced nothing but pasturage of wild grass and tame, flags, skunk's cabbage, &c.

About fourteen or fifteen years since the center drain of forty-six rods was opened and remained as an open drain for several years, with but little apparent effect. Up to the time of putting down the tile, the ground was entirely useless for tillage purposes.

During the present year the drains have been opened and the tile laid, in accordance with the accompanying sketch, at a depth of three feet. Sometime after the completion of the job, it was observed that a portion of the North side at A, was yet imperfectly drained; an additional drain of six rods was accordingly put down parallel with the main drain, and at a distance of about one rod, which, to a great extent, remedies the difficulty, although further improvement may still be desirable in that immediate vicinity. The difficulty seems to be occasioned by local springs.

During the past Spring and Summer, about one acre, including the West portion above spoken of, has been plowed and brought under cultivation. About one-fourth of an acre was planted with vines, beans, &c., which were ruined by frost and other casualties. The remaining three-fourths of an acre was planted with Ruta Bagas, which were badly injured by the fly, but ultimately recovered and finally yielded two hundred and fifty bushels.

The whole tract appears to be thoroughly reclaimed, and during the autumnal rains has been passed over with teams with even more convenience and comfort than the adjoining upland.

The following is a statement of the expense of drainage:

46 rods, 4 in. tile, 35c per rod,.....	$16 10
Hauling tile 5 miles, 5c per rod,.....	2 30
241 rods, 3 in. tile, 25c per rod,.....	60 25
Hauling tile 5 miles, 3c per rod,.....	7 23
Digging 287 rods of ditch, three feet deep and fourteen inches wide at the surface and five inches at the bottom, at 1 shilling per rod,.....	35 88
Laying the tile and filling ditch, 6c per rod,.....	17 22
	$138 98

Making the total cost per acre,.....	$23 16
" " " rod of 4 in. tile,.....	58½
" " " rod of 3 in. tile,.....	46½

The accompanying is a sketch and description of the drainage of a certain parcel of land embracing about six acres, entered by me at the recent State exhibition of the Agricultural Society in competition for a premium.

The tile used were role tile.

JOHN ALLEN.

Plymouth, Dec. 9th, 1859.

THE BREEDING AND REARING OF CATTLE.

[The following Essay on the Breeding and Rearing of Cattle was written by HENRY TANNER, Professor of Agriculture in the Queen's College of Birmingham, England; and was awarded the Gold Medal, valued at 250 dollars, offered as a prize by the Highland and Agricultural Society of Scotland. It has been selected for these Transactions as one of the most clearly written and concise treaties on a subject in which very many of the farmers of Michigan are most deeply interested.—SECRETARY.]

This subject is invested with deep interest, for it involves one of the most important branches of agricultural industry. Errors are often multiplied and perpetuated, and consequently must be more jealously avoided. The management of breeding cattle claims our most careful attention, because not only of the sources of remuneration from many districts chiefly dependent upon it, but the profits of every farm are, in a greater or less degree, under the influence of the system adopted, whether good or bad. I shall at once proceed to notice those points which appear to me to be of the greatest importance, and which I believe to be worthy of consideration in Breeding and Rearing Cattle.

I need scarcely stay to remark that, by the process of domestication, our breeds of cattle have undergone great change of form, both externally and internally; so much so, indeed, that there is scarcely any part of the animal which has not yielded to the change of circumstances which has resulted from their being brought under the care of man. The deviations from the standard character of our wild breeds only continue so long as they are kept under this artificial system, for we find that as a more neglectful course

of management is adopted, so the original character of the wild animal will again be developed. Hence the peculiar conformation of our improved breeds of cattle must not be looked upon as any permanent modification of form, but as entirely dependent upon their being continued under the same system by which the change was originally produced.

The characteristic points possessed by cattle in a state of nature are all eminently adapted for the preservation and perpetuation of the species, for Nature is perfect in all her details. Under our artificial system, we require certain modifications which are better adapted to our requirements. For instance, instead of having an animal almost destitute of fat, which is the condition of our wild breeds, we desire a fuller development of this material, together with a more tractable disposition; but to attain these results we have to alter the entire system of the animal. It does appear extraordinary that man should have such control over the animal race, but experience teaches him how to accomplish the desired result. We cannot accomplish this without the aid of Nature, and it is chiefly done by adopting two simple principles—1st, That the development of any part is promoted or checked by the degree of exercise which that part may have; and, 2d, That under similar conditions like produces like.

To illustrate these points more fully, I shall state as briefly as possible the principal changes which are observed in our improved breeds of cattle. I do so as concisely as possible, because I conceive it is desired that the report should be restricted as much as possible to the management of breeding cattle, and not extend to the more general treatment of cattle.

If we take either of our improved breeds of cattle, and examine one individual of the class, we shall find that there is a marked difference in the general outline of the body. The wide and deep chest, the roundness of the barrel, and the full development of muscle and fat over the body, give

the improved animal a certain squareness of outline which is totally at variance with any specimen of the original breed. Nor does the difference end here, for the internal conformation presents peculiarities of which the external form may be taken as a constant indication. The lungs and liver are found to be considerably reduced in size when compared with those possessed by animals having perfect liberty. The cause is evident, and admits of easy explanation. In a state of nature the animal is accustomed to violent exercise, and this brings the lungs into active work, and the result is a full development of the part. But suppose another animal of the same breed, kept in a very confined space the greater part of its life, the lungs, not having been equally exercised, would not be as fully developed. The progeny from this animal would also possess a tendency in the same direction; and if such an offspring were kept in a state of confinement, it would probably possess even smaller lungs than its parent. Thus the restricted exercise of our cattle has produced and perpetuated a small development of this part of the body. The same results are observable in the liver in an equal degree with the lungs; for similar active exercise induces increased energy in the liver, whilst the luxurious life of the improved animal produces a torpid and inactive liver.

Thus we observe that domestication has modified the development of the lungs and liver, and hence the functions they perform are proportionately diminished. It is well known that the food which the animal consumes chiefly consists of two classes of bodies—those which form muscle, and those which maintain the heat of the body. It is the latter class to which we must now refer. The heat of the body is maintained by the combustion of the carbonaceous matter of food. Combustion is not necessarily attended by that manifestation of flame which is generally observed; but the same change and the same results may be

produced in a much more gentle manner. This change actually takes place in the animal body, and the carbonaceous matter of the food under this action yields to the body the heat which is necessary for the healthy discharge of its functions.

The blood, on passing through the body, bears with it the heat giving matter of the food, and also carries other important chemical agents in its colouring matter; when the bodies come together, a change takes place and heat is produced. Now this change does not take place to any great extent in the arteries, but it is whilst the blood is passing through the capillary vessels, which pervade every portion of the body, that the action is rendered complete, and thus the vessels not only carry nourishment for the support of the system, but also distribute an equal supply of warmth.

It is clear, then, that the larger the lung the more fully does the body receive the oxygen which is to develop heat in the body; and the natural result is, that a more perfect combination of the carbonaceous matter of the food takes place. Fat is composed of the same materials as are thus used for keeping up the heat of the body, and, consequently, the more there is used in this way, the less remains for being stored away as fat. Thus large lungs are prejudicial to the formation of fat.

We may here observe that food may be very much economised by being consumed by "high-bred" animals; but it must be added that there are other attendant circumstances which act prejudicially. We may modify the operations of Nature; but she, with jealous care, guards these alterations, and continually places obstacles to check, and frequently to prevent, the perpetuation of the *unnatural* conditions which we desire so much to produce. These difficulties are constantly arising in breeding from animals of this class, and we shall subsequently have occasion to notice this fact.

With these introductory remarks I will proceed to the practical portion of this subject, and in it we shall find the principle thus briefly noticed more fully illustrated. It will be convenient to notice this subject under the following divisions:—

The Management of Cattle before Breeding.
" " " whilst Breeding.
" " " after Calving.

THE MANAGEMENT OF CATTLE BEFORE BREEDING.

In treating upon this subject we are naturally led back to the period of the calf's birth, and we cannot do better than trace its course through life. A great difference of opinion exists upon the best and most advantageous course to be pursued, and in various localities different systems are adopted. There are two modes of rearing calves; either the calf is removed from the cow immediately after birth and reared by hand, or else the calf is allowed to suck the cow. The peculiar circumstances of different farms may lead us to modify our course; but before commenting upon these various practices, it may be desirable to state them more fully.

In those cases in which the calf is never allowed to suck the cow, it is removed immediately after its birth, and, having been placed in a separate building, is well rubbed with straw. After a few hours, the first milk of the cow (generally called the beastings) is carefully given to the calf. This is best done by supporting the head on the hand, and allowing the milk to run gently into the mouth. This method is preferable to the more usual plan of making the calf suck from below. Indeed, for a few days it is better to supply the animal in this manner. Warm milk is the only food the young calf receives for about three weeks, and during this time it ought to be fed three or four times a day. A strong healthy calf will take from 8 to 10 quarts daily.

The calves are gradually trained to eat sliced turnips and linseed cake. The general plan is to put a bit of cake into the calf's mouth immediately after taking its milk, when it will continue to suck and dissolve the cake. When about six weeks old the same quantity of milk is given at two meals instead of three, and at noon some other food can be given. This will be chiefly cut roots, hay, and crushed cake. These are gradually increased in quantity as the calf is able to consume larger quantities, and the milk is decreased proportionately. When the calf is first put out to grass for a few hours, the house food is steadily decreased, so that it may be prepared for grass food when turned out for the summer grazing. The advantages of this method are the economy of milk, and its division amongst the calves according to the discretion of the feeder.

The second plan differs from the above in the calf being allowed to suck the cow for the same length of time, instead of the milk being drawn and given to it. When this plan is adopted, the calf is not removed after birth, but is allowed to remain beside the cow, and she soon dries it by the natural process of licking, which at the same time encourages the circulation of the blood throughout the body of the young animal, and acts as a purgative on the cow. Within a few hours the calf will probably be strong enough to stand and suck, but if not it must be assisted. Should there be great weakness, a little milk should be drawn and put into the calf's mouth at intervals, until it gains strength. Generally it is kept in a crib within a short distance, and allowed to run to the cow on her being brought into the homestead. In too many cases the calf only receives its food morning and evening ; but the mid-day meal is much to be desired, and should always be allowed, for the little additional trouble is well compensated by the progress of the calf.

If the cow is an ordinary milker, she will have more

milk than the calf requires, and many adopt the plan of letting one cow rear two calves; or if this is not done, the milk which the calf does not require is drawn from the cow by hand. If, however, the cow is an inferior milker, she will do but little beyond supplying her calf, and, in some cases, afford it only a bare sustenance. When such is the case, the cow must have food given her to promote the formation of milk of good quality—such, for instance, as oil-cake. When a cow is rearing two calves, we frequently observe that the one being the fastest feeder gets the lion's share of the milk, whilst the other has only a spare allowance. This must be overcome by allowing the weaker one to have the start of the other in commencing its meal—unless it appears that the cow's milk is insufficient for both of the calves, in which case give the cow richer food.

The course of practice is modified by some breeders, who, after allowing the calf to suck ten days, allow it 6 or 8 pints of new milk twice daily, and after this has been continued two or three weeks, *gradually* substitute *skimmed* milk for the new milk, adding oatmeal porridge, and allowing the calf cut roots and hay until it is ten weeks old, when the milk is entirely stopped. Other breeders, when the milk is removed, use as a substitute ½ lb. crushed linseed, ½ lb. bean meal, ½ lb. molasses, daily, made into 8 or 10 quarts of soup. And this is decidedly a good artificial food for calves.

The stomachs of all ruminating animals—and cattle are of this class—it is well known, differ from those possessed by other animals, in consisting of four compartments, or stomachs, instead of only one. In the calf these stomachs are not fully formed—in fact, one only is intended for action at this period of life, and the other three are but slightly developed. The stomach which the calf possesses is the true digesting stomach, and this is the only one which ought to be brought into play during the period it is living on milk. Unfortunately, however, it frequently

happens otherwise; especially in cases where the calves, from rapid drinking, have the rumen brought into action prematurely.

The process of digestion in the calf is invested with much interest, because it illustrates the simplicity, and at the same time the perfection, of all the functions of life for accomplishing the object in view. It devolves upon food to assist in building up the body of the young animal; hence it should supply all the materials required for forming the various parts of the body. These parts consist of muscles, sinews, nerves, fat, membranes, arteries, veins, bones, &c.; and is it possible that in milk we have all the requisite elements present? Yes; we learn from daily observation that such is the case, and a knowledge of the composition of milk confirms and explains the fact. The following analysis of cow's milk has been given by Chevalier and Henry:—

Casein,	4.48
Butter,	3.13
Milk sugar,	4.77
Saline matter,	.60
Water,	87.02
	100.00

In this food we have the saline matter required for the growth of the skeleton, the casein for the production of the muscles, and various organs of the body, together with the butter and milk sugar, which are prepared to furnish warmth and fat to the body. As soon as the milk passes into the stomach of the calf, a fluid called *the gastric juice* is thrown off from the coat of the stomach, in a manner somewhat similar to perspiration from the skin. This gastric juice is of an acid character, and immediately curdles the milk; for it combines with the soda holding the casein in solution, and immediately the curd is separated. Thus we have the same change immediately produced which we observe in milk which has been kept for a long

period and allowed to become sour. This curdling of the milk is rapidly followed by a decomposition of its several parts, which pass into the blood and nourish the system.

Thus the internal organism of the calf points to the use of milk *alone* for the early period of its life, and a careful observation of the most successful practice tends to confirm this opinion. For the same reason we may also learn another lesson from the natural habits of the animal—that the supplies of food should rather be moderate and frequent, than larger in quantity after longer intervals. In this respect there is a great difference in the general practice of feeding the calf which is separated from the cow, as compared with others which are not taken away. We find that calves which run with the cow thrive better than others, because they can draw their supplies of milk frequently and in small quantities—in fact, at such times as they feel in want. The stomach of the calf is small, and when the process of digestion is vigorous, the food which it can contain is soon used for the support of the system, and consequently a period of want often intervenes before the fresh supplies are received. This does not arise when the calf has a freedom of access to the cow, for immediately the desire for food commences it can get a further supply. No doubt it may be questioned whether this is an economical method, and one desirable for general adoption; but there are cases which render such a course absolutely essential to success, and I believe in many other cases the question of economy is too often viewed under the contracted aspect of present cost rather than future return.

In rearing a calf there is one object to be kept steadily in view, and that is, to promote the development of the body as much as possible. In the calf which is to be fattened and killed no one will dispute it, and I believe it will be equally important in the case of those which are to be

reared for beef, but it is still more important in rearing breeding stock. From the period of birth this development should be progressive, not interrupted by checks from poor and insufficient food, to be followed by better allowance for a time, and thus only alternating its progress and relapse. When highbred stock are to be reared, a very different system from this is adopted. In fact, if it were not so, they would rapidly degenerate. In rearing these calves, they follow the natural course of allowing the calf to run with its dam, or else let it have frequent access to her, whilst at the same time she is fed with oil-cake to give richness to the milk. This is the system which is most calculated to produce the best results. The use of artificial food for the calf is carefully avoided in its early stage, but when it is desirable to force the young animal into a more rapid growth, the supplies of artificial food may be given through the medium of the cow. In this manner similar benefits will result, without any prejudicial influence upon the stomach of the calf.

We now come to consider how far such a system is economical or otherwise, and my own impression is, that a liberal system of feeding is always desirable, and that it is not as extravagant a plan as it is frequently thought to be. The object must be kept steadily in view. If *milk and butter* are to be marketable articles, and they are to have the preference, by all means let everything else yield. If, however, the object is to produce *good stock*, then the butter must yield the supremacy, and the stock take the lead. Many, however, do not like this, and want to have the supplies of butter and good stock as well. But this cannot be. They are antagonistic claimants, and one or the other must be placed in the rear. On many farms a preference will be given to the butter, but every one should clearly keep in view the main object he is aiming at, and let him not for a moment believe he is going to sell his full quanti-

ty of butter, and yet have his stock improved, unless he adopts a judicious and liberal system of feeding.

Few who have not especially noticed this point will be disposed to credit the real difference in value between two calves (say eight or ten weeks old) reared under the different plans referred to. I do not simply refer to their worth as determined by weight, but, if I may use the term, their prospective value. The difference between them is marked as regards their subsequent progress, and some pounds may separate their value when two or three years old, provided both are carried on from the present age upon an equal and liberal system of feeding. We have not simply to look at the weight of veal, but rather to the *kindly disposition* induced in the animal, which always shows itself by a tenacity to thrive.

When a farmer is rearing steers for the purpose of producing a certain weight of beef, this tendency to thrive and *lay on flesh* is valuable; and during the whole course of life this ultimate object will be most economically promoted by a liberal system of feeding; not variable, which must produce checks, but regular and progressive. In fact, such an animal should never be stationary, for not only is the animal at such a time producing no profitable return, but it is actually decreasing in value.

It is, I believe, not only of equal, but of even greater importance in the case of those animals which are reared for breeding purposes. These are to be viewed as the *parents* of others, and thereby good or bad qualities become multiplied. If it is objectionable in the case of animals intended for the butcher, it is important in a far higher degree for those which are *to produce them*, and which are to give them a conformation and tendency favorable to this end. The law of like producing like is of very general application, and we must not expect a cow without any tendency to fatten, to convey to her offspring a dispo-

sition she does not possess. I am well aware that the character of the bull will have influence here, but it will be favored or checked by the qualities of the dam. We must not consider that because the primary object in rearing cattle for breeding purposes is not simply for the production of beef, that therefore this may be altogether disregarded.

If we seek the best method of rearing a calf, we cannot do better than follow the course pointed out by nature, and allow it to suck its dam, either having frequent opportunities of access to her, or else freedom to run with her. If the calf is intended for veal, it will be preferable to keep some restraint upon the freedom of the calf, but if it is to be reared for stock, moderate exercise will be beneficial. Many calves are kept in small cribs, about four feet square, each being furnished with a little trough, so as to induce the calf to learn to eat artificial food and hay. In other cases each calf is fastened by a strap and a small halter, so as to prevent its running about. The former plan is undoubtedly a good one, if the calf is separated from its dam, because it allows of a freedom of exercise, but the supplies of food for the first three or four weeks are objectionable. It is better to give the cow extra food if the calf is not making sufficient progress, and it will be ample time after the third or fourth week, for the calf to commence the use of solid food. Fastening the calf by a strap, and keeping it in the dark, may be desirable for a fatting calf, but would not be adopted for store stock. When the calves are six weeks old, they should have a larger space for exercise, and several may be allowed to run together with advantage.

When the calf is intended to run with its dam, both should have shelter during inclement weather, and the cow should have her surplus milk drawn at regular intervals. When a calf of choice character and breed is to be reared,

it has been recommended that, should the milk of the cow prove deficient—as is too often the case with cattle which are very high bred—that the calf be suckled by another cow possessing better milk character. This would, of course, be seldom done except with valuable stock, but in such a case it is desirable, and the benefit will soon be observable in the progress of the calf.

When the period has arrived for allowing the calf to get accustomed to solid food, I should commence by giving it some finely cut pieces of turnips, mangolds, carrots, &c., which, from their soft and juicy nature, are preferable to any other dried food. This may be accompanied by small supplies of the best portions of the hay, which may be gradually increased as the calf gets older, but the supply of milk should be continued as before. A small allowance of meal may be advantageously spread over the cut roots. In weaning the calf it is desirable to bring the three meals into two, and after a short time, gradually decrease the new milk in quantity. This should not be done too rapidly, for a *sudden* substitution of skimmed milk for new milk generally produces a large-boned calf, with a coarseness of habit ill adapted for ultimately producing a good feeding bullock.

We have already noticed the composition of milk, and therefore we know what the calf receives, and also what is withheld. It is clear that the system cannot add to its growth any matter which it does not receive, whilst that alone which is presented to it in its food is capable of being used in promoting the growth of its body. In giving milk deprived of its butter, we supply saline matter, which forms the skeleton, and the cheesy matter from which the muscles are formed, but we have removed the oily portion which was destined to form the fat and fatty membranes of the body. Thus the growth of the skeleton and muscles is continued, but these muscles are not furnished with those fatty membranes in which the fat is stored, and which give to the skin of the animal that sure indication of a disposi-

tion to fatten which we know as "*the touch.*" It only needs a careful observation of the calves thus reared to convince any unprejudiced mind that there is no economy in the saving thus effected. Substitutes are frequently employed, and undoubtedly lessen the bad effects; but when the primary object is to produce a superior class of stock, it will be desirable for the calves to have a liberal supply of new milk for at least two months. Linseed is very valuable as an assistant or substitute. Linseed gruel and Irish moss are also very good for this purpose. These substitutes are very often employed, especially the mixture of linseed and bean-meal with molasses. The Irish moss is extensively used in some districts, and with successful results.*

The time of weaning must depend in some measure upon the season of the year when the calves are born. As far as possible they should be ready to wean in the month of May, and if they have been carefully managed for three or four months previously, they will be quite ready for weaning. The calves which may have been born in the preceding November or December will have made much more progress, and will also make more rapid growth during the ensuing season, for this advance, before going upon grass. The calf should be gradually accustomed to the use of green meat, and some early vetches, rye, clover, &c., will not only be an agreeable change with its regular supplies for food—cut roots and hay—but it will prepare the stomach for the more juicy food on which it is about to be put.

When the herbage has made good progress, and the weather become mild, the calves will be ready for going out. At first they should be put upon young seeds, and allowed to remain rather longer each day. It will be better for them to be sheltered at night for a month or six weeks, as the coldness may cause a very undesirable check.

*These substances are perhaps as good as any for making gruel for calves. Some, however, consider that giving substitutes for milk in this form encourages acidity in the stomach and scouring. Calves soon learn to eat fresh linseed cake in a dry state, and no other article is so easily digested, and so well fitted to promote health and growth.—Ed.

In fact, the calves would be better if they had the means of taking shelter through the first summer, for excessive heat and cold are alike to be avoided. An occasional change of herbage, with a free supply of water, will be the chief points to be attended to through the first summer. The calves should take the precedence of old stock, and the latter should finish the fields after the calves are taken away. If the supply of grass is abundant and good, this will be sufficient for them during the first summer.

If it should be wished to push forward the calf to an unusual degree, and it has up to this time been sucking the cow, both may be turned out into good grass, and the aid of the cow will be very evident in the growth of the calf. This, however, is only to be done in extraordinary cases; for, provided the calves have been brought forward well and prepared for turning out as directed, a good supply of grass will enable them to make sufficient progress for all general purposes.

Such, then, I conceive to be the proper management of the calf, from the period of its birth until, as a yearling, it is brought to the homestead for a further course of treatment. A system is thus adopted which leads to a constant and progressive development of all parts of the body, whilst the healthy discharge of the functions of life is carefully provided for. But it frequently happens that we have a neglectful system pursued, and the result is, that we have diseases peculiar to this age, which need special notice, not only because they urgently press upon us the importance of prevention—which is always better than the cure—but also to remind those who have taken a false course how to correct the ills which have arisen therefrom.

The earliest disease from which calves suffer most commonly is *Costiveness*. Many of these cases arise from the prejudice on the minds of some persons against using the first milk which the cow produces. This is much denser

and deeper colored than ordinary milk, and is valuable as a purgative to a newly-born calf, being the safest and most effectual agent which can be employed. Many, from a mistaken prejudice, have this milk drawn from the cow and thrown away. The consequence is, the calf loses this natural medicine, a costiveness ensues, which is very often obstinate in its nature and difficult to overcome. At other times it is caused by dry food, such as hay, passing into the stomach of the young animal before it is ready to receive it. In these cases I should give two or three ounces of castor-oil, or else two or three ounces of Epsom salts, and ½ drachm of powder ginger.

Navel-ill is referable, in the majority of cases, to oversight and neglect at the time of birth. Bleeding is often suffered to continue, and drain the calf's strength, whilst a careful ligature of twine would have prevented the loss.

Inflammation of the Stomach is also another result of careless management, generally arising from the calf being allowed to *drink its milk greedily* and rapidly, instead of sucking it gently. The result is, that the milk is swallowed more rapidly than the stomach can receive it, and hence is forced into the rumen. Here it becomes sour and curdles; the cheesy matter remains, irritating the coat of the stomach, and finally producing inflammation. This is the cause of death in a large number of calves, and little can be done except by prevention. A dose of Epsom salts may relieve the inflammation, especially if given when the appetite first falls off. It is generally accompanied with grating of the teeth.

Scouring may be produced by several means: a sudden change of keep, and the use of indigestible food, are the more frequent causes. The former should always be carefully guarded against, but the cause will generally suggest the remedy. If they are removed to food of more solid character, it will probably cease, but care must be taken

not to allow the bowels to become too costive. Should the change of food not prove effectual, some of the cordial named below will be found useful.

When the diarrhœa arises from indigestible food remaining in the stomach and causing an irritation of the membranes, it is evident that some medicine must be given to remove the offending matter, such as castor-oil or the Epsom salts and ginger already named; this may be followed by the use of a cordial or astringent mixture, consisting of —catechu, 1 ounce; spirits of wine, 1 ounce; laudanum, 1 ounce; water, 1 pint—in doses from one to two ounces twice daily.

The Management of Yearling Heifers may now be noticed. These will be brought from the field in which they have been summered, and placed in sheltered situations near the homestead. An open yard, with sufficient shedding, is by far the best place for wintering young growing stock, and especially in preparing them for avoiding the quarter-evil, to which heifers of this age are peculiarly liable. Exercise is of the greatest importance to young and growing stock, as it enables them to bring the various parts of the body into action, and thus induces a healthy development of the organism. In addition to which, if young cattle have good shelter, and can at all times rest in a dry and comfortable position, they become more hardy in their constitution, and better able to withstand the attacks of disease, than that enervated and enfeebled class of stock which are confined in warm and ill-ventilated buildings during the winter months. I have experienced the difference in a marked degree, and I am fully persuaded that the want of exercise, and the too careful housing which young stock sometimes receive, are frequently productive of much injury to the constitution. On the other hand, when stock are neglected, and have little or no shelter from the storms of winter, they must necessarily suffer therefrom. The medium course is the best. Give the

young cattle warm and comfortable shedding, with plenty of exercise, fresh air, and a liberal supply of bedding, and no fear need be entertained but that they will thrive better, and remain more healthy throughout the winter and *following summer*, than when kept in any other manner, especially under a system which shields them from every change of temperature, like conservatory plants. It is needless for me to draw the attention of my readers to the difference in their coats in the spring. If they are thus treated they retain their rough coats, as nature intended they should, until the weather renders it desirable for them to be cast away; when young stock come from the houses in the spring, they generally have the sleek coat of summer to withstand weather for which it is not sufficient, and the result is a check, which is in most cases accompanied with an inflammatory tendency.

It may be argued that an economy of food requires a different system of management. I readily yield the point that stock which are thus exposed require more food than others will consume in more sheltered situations,—and hence there is a sacrifice made in this respect. But I believe it to be a sacrifice which is well worth making, because you obtain thereby a degree of hardiness for the animal which is extremely valuable, and in comparison with which the extra food consumed is not worthy of consideration.

The usual food for yearlings during the first winter is hay and turnips. This is a very suitable food, but the addition of 1 or 2 lbs. of oil cake daily, according to the size of the breed, will favor their growth and condition, and much more than repay the expense (say 1d. to 2d. per day) in the animal, whilst the manure in the yard will be of superior quality. Hitherto the use of oil cake has been too much confined to the *fattening* stock of the farm, but I believe its use upon *the store stock* is frequently attended with *more profit* than upon the fat stock. It is, however,

worthy of a passing remark, that store stock thus accustomed to small quantities of oil-cake subsequently fatten more easily than others not thus prepared for fattening. It will generally be found desirable to fasten up store stock whilst having their cake; a more regular consumption will then take place, and the stronger animals will be restrained from taking the share of a weaker neighbor.

Another point in the management of growing stock, and which is of great importance, is quiet and gentle treatment—everything like harshness being studiously avoided. They should rather be accustomed to receive attention, and allow persons to approach them without fear. In some yards it is almost impossible to approach them without the danger of their injuring themselves in their attempts to escape; whilst in other cases, when accustomed to quiet treatment, strangers even may approach and examine them.

By continuing such a careful and liberal course of treatment throughout the winter, we shall find the yearlings in good condition, and ready for being turned out to grass as soon as the season and the herbage are sufficiently advanced. During the second summer shelter and good keep will be equally beneficial, although not equally imperative, still nothing like a check should ever be allowed. The use of oil-cake may be advantageously continued to a small extent—say 1 lb. daily; but when the pasture is deficient, it may be increased. This will improve the land, whilst the stock will grow better and be much more healthy. In fact, it has been found that the use of small quantities of oil-cake has prevented the quarter-evil—a disease much dreaded by most stock-breeders.*

* Mr. Wilson, Edington Mains, considers the use of linseed-cake as a specific in quarter evil. His invaluable Prize Report on the Rearing of Cattle, published in the Transactions, may be consulted on this point. I have never met with a case of this disease in all my experience. Good keeping, however, may be considered not as a preventive in every instance,—a famous breeder of improved short-horns having lost in one summer four calves,—which had been treated in the most liberal manner. The same breeder had lost from time to time so many fine animals by the disease, that he had to give up, from prudential motives, the breeding of valuable stock. This instance is rather against the idea that oil cake is an unfailing remedy against the malady. Other agents, such as atmospheric influences or nature of the soil, have in all probability not a little to do with it.—J. D., Athelstaneford.

This *quarter-evil* is a subtle complaint, which is almost peculiar to our yearlings. It carries off large numbers of stock, and when its attack is commenced there is little hope of recovery. One general cause may be observed in the majority of the cases, and it is the result of bad management. For some cause or other the yearlings have had *a check* in their growth. It may be from being wintered badly, or possibly from being put upon inferior pasture in the early summer, or it may be from sudden change from warm buildings during the cold nights of May, followed by a sudden removal to better keep or more shelter. The first result of this change is a gradual improvement in the animal, which continues in a marked degree until the system is preparing more blood from this rich food than it has energy to use, and the result is an inflammatory action in one quarter of the body. Had the system been kept in a state of progressive improvement, it would have been prepared for the healthy employment of the nourishment brought into the system, but as this nourishment follows a period of scarcity, the system receives this rapid increase of rich blood more quickly than it regains its energy to use it, and hence an inflammatory action commences.

There are various modes adopted to prevent this attack. A seaton in the dewlap is frequently employed with success. Occasional doses of purgative medicine have been found useful. The cause, however, appears to suggest the preventive by avoiding periods of insufficient food being followed by strong keep. It will sometimes happen that the keep is not sufficiently abundant for the stock, but this should be met by the use of artificial food (such as oil-cake, for instance,) and great caution should be shown in putting stock upon better keep after they have had a short supply.

If, however, the quarter-evil makes its appearance, I have been frequently successful in curing the animal by

giving one of the following powders three times daily—digitalis, 1 scruple; nitre, 1 drachm; tartar. antimony, 1 scruple. Its utility depends upon its *immediate* use, for loss of half an hour may determine against its being of any service. The appearance of this disease should lead to extra diligence in preventing any others from suffering in the same manner, as generally there are others similarly predisposed for its attack.

Rheumatism is often productive of much inconvenience, and especially amongst cattle of this age. It generally arises from a want of sufficient shelter, or from stock being kept in low, damp land late in the season. Remedies are here of little service, for the attack soon passes off after they are removed from the cause.*

Management of Two-year-old Heifers.—Little need be added to the foregoing to describe the course of management which should be adopted the following season, for it is simply a repetition of the former year's practice. I shall therefore proceed at once to consider the time at which heifers should be allowed to breed. The practice of breeders differs as widely as it is possible, and many adopt a course they do not entirely approve of, to overcome greater difficulties which present themselves in making many of our best animals breed. These difficulties are oftentimes almost insurmountable, and many of our best animals are consequently placed in the hands of the butcher, with a very reluctant will on the part of the breeder. It is very desirable we should understand the causes which come into operation, as they are productive of much inconvenience and delay, and frequently lead to the loss of our best animals.

The fact is, what we consider a *perfect* animal is alto-

* The effect of rheumatism is understated; it frequently assumes an aggravated form, when once the ligatures and membranes of the joints get inflamed. A chronic tenderness or inflammation sets in—for such cases there is no cure. Young bulls are most subject to it. It is supposed by many to be the effects of cold, chills, or want of sufficient exercise while the animals are allowed nutritious food.—J. D.

gether an unnatural development. The consequence is, that as we diverge from the original type, so increased difficulties are thrown in our way for reproducing animals possessing such unnatural characters. If we take an ordinary cow or heifer, reared on common land or moors—it may be, under many hardships and privations—we find no difficulty in breeding from such an animal; but when we have—as we call them—better bred animals to deal with, we find a progressive series of difficulties. Are we then to consider the design of nature incomplete in this respect? Certainly not. This is no solitary instance of the opportunities of improving natural produce which stimulate the energy and industry of man, and of the reward which follows his perseverance. Look at the general produce of a farm, and observe the extent to which many of our most valuable productions differ from and surpass the original specimens from which they may have been obtained. All, however, if neglected, possess a tendency, as it is termed, *to degenerate*, or, in other words, to resume their original character; and this is doubtless a valuable property. Our improved cattle do not possess those conditions which are best adapted for perpetuating the species; and it becomes evident, upon examination, that nature, whilst she has with jealous care made abundant provisions for perpetuating every description of animal and plant, and given them habits and developments best adapted to this end, has at the same time given them expansive capabilities. Thus, under the care of man, they are capable of improvement; but as soon as he neglects them, they gradually re-assume their original form, in which they are independent of his care. So far, then, from being an imperfection in the design of nature, we see here how she encourages those who strive for improvement, whilst at the same time she has not overlooked the safety of the species when neglected and uncared for by man.

The difficulties which impede our breeding from highly

developed animals are twofold—barrenness, and incapacity to retain the embryo. These are too often looked upon as similar, but there is a great difference between these two causes. Barrenness results from an imperfect development or action of the organs of generation; but in order that this may be fully understood, it will be important to have a clear view of the process of productive generation. The seed is formed in the ovaries of the female; as soon as an ovum is fully ripened, it causes a very great degree of excitement, and the animal manifests its desire for the male. This period is determined by the ovum becoming fully matured. Around the mouth of the ovarium we find the fimbriæ, which hold in their convoluted folds the ovum thrown off by the female, until the same is impregnated by the seminal fluid of the male. The impregnated ovum then descends through one of the Fallopian tubes into the uterus, and the development of the embryo into a fœtus immediately commences.

It is evident that many circumstances may render the animal incapable of breeding; for instance, malformation of any of the parts, and also want of energy in the system to enable the ova to be formed. Natural barrenness of this kind is beyond our control, and the animal will have to be fed; but generally speaking, the animal comes into heat periodically, and hence some other cause is indicated, for it seldom if ever happens that an animal which is incapable of breeding from the two former causes manifests this desire for the male. When, however, this is never observed, it is an old fashioned plan to give her a quart of milk from a cow which is bulling, and it is said to produce an excitement of the energy which had previously remained dormant.

The majority of cases of difficult breeding may be traced to the excitement of the uterus throwing off the impregnated ovum instead of allowing it to remain and become fully developed into a fœtus. The consequence is, that many

animals continue to take the bull month after month without being productive, and various methods have been adopted to overcome this difficulty. Some bleed the animal immediately upon her taking the bull, so as to draw away blood from the part, and decrease the excitement; others throw water over the hinder part of the animal, with a view of driving the blood to the interior portion of the body; another method is to throw some water into one of the ears of the animal; this gives a shock to the system, and the fright draws off the attention, and consequently lessens the excitement in the uterus. I have found the most successful plan is to allow the bull to serve again when the period of heat is passing off. It is, however, generally necessary to use a young bull for this purpose.

Many breeders of high-bred stock, to overcome this evil, have their heifers put to the bull very much earlier than they otherwise would do—in some cases when little more than yearlings. It is very evident that a great sacrifice is made by adopting this plan. Before an animal has made its growth and its parts have become fully developed, the energy of the system is diverted towards another object; if, therefore, the nourishment which the heifer receives is divided between promoting its own growth and that of the calf, it is evident that both will suffer therefrom. The parent is thus thrown out of proper form by the weight it has to support, and the entire system suffers from an excessive demand on its strength. The offspring is equally prejudiced, for it receives the constitution of an enfeebled parent, and for a considerable time shows the ill effects upon its system.*

It has been considered that this difficulty of breeding is a necessary consequence, but I have to a great extent overcome it by adopting the following plan. Presume that we

*Heifers may, at sixteen months, if properly developed, be put to breed without any injurious consequences, provided always that they are liberally fed during the period of gestation, and not allowed to suckle their offspring. By being put on good pasture they will grow freely, and this practice almost insures them going on breeding, and their shape is not injured.—J. D.

are dealing with a choice lot of heifers, which have had every means and opportunity of becoming fully developed, and that from the period of birth until they are, say, from twenty-one months to two years old, they have been reared with a view of producing as perfect animals as the breed will allow. Suppose them to have been calved early in the year, they would, when brought into the yards, be twenty-one months or thereabouts: instead of putting them upon good food, they should be put upon a straw diet for a month or six weeks, not simply that they may pick over the choicest portions, but eat the greater part supplied to them. The result is, that this diet leads to a loss of condition, and a greater aptitude for breeding immediately results; for it is a law of nature, that any check upon the animal which threatens to endanger its permanency (disease excepted) diverts the energy of the body to a reproduction of its species.

I have seen the end gained by sending stock to another district, giving them change of climate and herbage, but it must be to inferior rather than superior kept. Heifers which have been removed from rich lands in consequence of the unsuccessful endeavour to make them produce stock, and put upon the moors, have been found to breed directly. Of course, judgment must be used in the degree to which such a check should be carried, for a remedy which in itself is valuable may be rendered destructive by injudicious use.

My own experience and observation lead me to the conclusion that, through the early stages of life, a liberal system of feeding is most desirable, and that it should be continued until the animal has become well developed and ready for breeding. Then give a sudden change from good keeping to straw diet, and after four to six weeks commence using the bull. I would strongly urge that the bull should not be used until the heifers are thus prepared; for when once an animal has returned to the bull, it

has a *greater* tendancy to do afterwards. I therefore strongly recommend breeders not to use the bull first, and, having found it fail, then to adopt the above system. They should be carefully separated from other stock for some hours after they take the bull each time, and subsequently kept apart until all signs of heat have passed away. Should any cases arise in which the heifers fail to prove in calf by this method, and the breed is of such value as to render the additional expense but of little importance, send them away to the nearest common or moor for the following season, and let them be regularly brought to a good bull. I need scarcely say that any which prove to be in calf should *gradually* receive better food.

The difficulties with which breeders have to contend are not confined to the female side; it is therefore important to glance at the other part of the question. In rearing the bull the principles I have named apply with equal force, but I am bound to say are not equally disregarded. In fact, the generally received impression is, the young bull should have every opportunity for arriving at a perfect growth. I shall not therefore occupy valuable space by a recapitulation, but rather state that the same liberal system of feeding is of even greater importance in the case of of the bull than I have represented to be for the heifers. Many allow young bulls to commence serving cows when twelve months old, but it is not to be recommended. I should rather advise delay until twenty or twenty-four months old. Up to this time every inducement should be given to the system to attain a perfect development by a careful course of management. Afterwards, however, whilst used as a breeding animal, it is desirable to keep the bull *in good condition*, but not as *fat* as is usually done. It is true that "fat hides faults," but the breeder need not thus blind himself, and add to any existing deficiency in the animal a want of vigor and energy which it is so important the bull should possess.

We may safely take it as a rule that, after a bull has attained a full development, our object should be to keep him in *active working condition*, rather than as a *fat* bullock. It is altogether a false idea that a tendency to this *excessive* fatness is given to the stock. My own conviction is, that the same bull, in good working condition, would throw a more healthy calf than he would when excessively fat, and with at least an equal disposition for fatting. In addition to this we must not overlook the large number of failures and disappointments which arise from *fat* bulls. There is less activity and less power without any compensating advantage; and therefore I suggest that the bull should be allowed to become well developed before being used, and subsequently, whilst being fed liberally, the food ought rather to have a tendency to form muscle than fat.

We may now refer to some other causes which render bulls unproductive of stock. There may be a natural incapacity to produce stock from malformation; but this, although existing in some instances, is not frequent. Sometimes, however, an animal having produced calves loses the power of reproduction either for a time or permanently; this is generally the result of disease. It may arise from over-exertion, or premature use, but more frequently from inflamatory action, induced by contact with cows which have been driven far, or which have been running about violently. Many choice bulls are thus injured from cows being sent considerable distances. Cows which have been driven for a distance should always remain in some loose-box as long as may be prudent, so as to cool down before being put to the bull. If, however, the bull has caught this disease, he should be kept from breeding for a time, and the parts regularly fomented, and cooling medicine given. Mischief generally happens from the early symptoms being neglected, and thus the bull often becomes worthless.

Close relationship of blood is another cause of unproduc-

tive bulls; and they are often condemned, as incapable for producing calves, when an entire change of blood disproves their incapacity. This is even more evident with heifers.

In conjunction with this part of my subject, it may be desirable to make a few passing comments upon the chief points of character which should be possessed by breeding animals. I do so irrespective of breed; for although each distinct breed may have its own peculiarities, yet there are certain qualities which should be possessed by all breeds in common with each other. The first point to be clearly settled is the class of animal to be produced. It is not enough to decide upon breeding from a cow or heifer; we must rather decide what we want to produce, and select our animals accordingly. It may be either breeding, dairy, or beef-producing stock, which is required, but each renders a modified course desirable, and I may say necessary.

Breeding Stock.—As a general rule, it may be taken that, to produce superior breeding stock, no middle course is safe or successful. The *best* stock obtainable should be bred from, and it is bad policy to spare any moderate outlay in securing first-class animals. Many obtain *second*-class animals, and endeavor to raise from them superior breeding stock. I am convinced it is a wrong policy to adopt. Breeders will not generally spare their best animals, and it frequently happens that the best cannot be obtained. In such cases there is no choice but to select the best that may be obtainable.

In such cases *pedigree* is fully entitled to our consideration, and it is desirable that it should be watched with care. In all cases where the breed has been carefully preserved pure, great benefit will result from doing so. The character of a breed becomes more and more concentrated and confirmed in a pedigree animal, and this character is rendered more fully hereditary in proportion to the number of generations through which it has been transmitted. By

the aid of pedigree, purity of blood may be insured, and a systematic plan adopted by which we can perpetuate distinct families, and thereby obtain a change of blood without its being a cross. It is evident that any one adopting a systematic arrangement will be able to do this more effectually than another without this aid. This is the more important when the number of families is small, as is the case with Devons and Herefords, especially the former. The individual animals from which the Devons are descended are very limited in number and in a few hands, but, with some honorable exceptions, little attention is given to this point. The importance is rendered evident by the decreasing size of the breed, the number of barren heifers, and the increased delicacy of constitution shown in the stock of many breeders of that district who are not particular in this respect. The contrast between such herds, and those in which more care and judgment are exercised, renders the advantages of attention to pedigree very evident; for here the strength of constitution is retained, together with many of the advantages of this valuable breed.

Having then, with due consideration, selected the breed and the families of that breed passing the points which are to be perpetuated, it is necessary to take individuals therefrom. The cows should be characterized by an aptitude for producing fine calves and bringing them to a full degree of development. They should therefore be good milkers, for the value of the produce will be very much regulated by this character. We shall have occasion to see subsequently that this property is in no degree prejudicial to any other desirable point of character. This tendency to produce milk not only influences the supply of food to the young animal after its birth, when any deficiency may be remedied, but it regulates the growth of the calf before birth, when a substitute cannot be used. Thus many of our best-bred short-horn cows produce calves which are

very imperfectly developed and exceedingly weak — so much so, that many persons accustomed to *inferior* stock would consider them scarcely worth rearing. This is mainly referable to the supply of nourishment given to the calf being so small, for the subsequent supply of milk clearly indicates how limited had been the support given to the fœtus."

This neglect of the milking disposition is a great evil at the present day, and our best breeds are suffering, and will continue to suffer, from it until more attention is given to this point in the awards at the National Exhibitions. Here it should be made a leading point of merit, and this would stimulate breeders to give more attention to it. It has been sadly overlooked, but it is in the power of the Highland Agricultural Society, and other kindred societies, to do much to bring our breeding cows into a more satisfactory state in this respect. Already, great complaints have been made of stock sent abroad, and particularly from America, which acts prejudicially on ourselves; and when it is seen that the possession of milking properties may be advantageously encouraged even in our best breeds, it is evident that it is only necessary to draw attention repeatedly to this fact, and sooner or later it must be corrected.

Breeding cows should also possess *strong and healthy constitutions*, and there are certain developments of figure which indicate their existence. No one would consider a flat-ribbed animal with a narrow carcass and contracted chest to give promises of health; neither would the rising of the rump-bone be a good feature. These are sure signs of a predisposition to consumption and diarrhœa. The full round barrel and the deep wide chest, together with a level back and broad pins, are essential points of healthy constitutions.

We are well aware that many diseases are transmitted from parent to offspring, which must be jealously guarded against. Dysentery, consumption, scrofula, and rheumatic

affections have been clearly proved to be perpetuated in this manner. It is therefore of the deepest importance to avoid anything of the kind in the parents selected for a herd of breeding cattle. The three former frequently result from relationship being too close, in other cases arising from different causes, but the effect is the same, so far as regards the extension of the evil. That boldness of figure which we prize as indicating a well-developed animal is also valuable as a sign of health and vigor. Thus, those points which are so pleasing to the grazier are equally valuable to the breeder.

The breeder of first class stock cannot be too particular in his selection of bulls. He must always be prepared to detect the weak points of his stock, and remedy them by using a bull well developed in these respects. Notwithstanding the great importance of having good cows to breed from, the influence exerted by the bull renders his quality and character of even greater importance. Not only are his good or bad qualities spread through the large number of cows he serves, but there are certain hereditary qualities more fully transmitted from the bull than the cow. The bull, therefore, should be as perfect as can be obtained, and possess the greater purity of descent.

The following points may be said to indicate a well-developed bull:—

The Head should be rather small in proportion to the animal, and well set on the neck, with a fine tapering muzzle, a broad forehead, bright full yet placid eyes, furnished with a graceful horn of fine quality, and ears small and fine.

The Neck should be thick but not too short, but having a graceful appearance by tapering steadily towards the head, and yet not getting thin behind the ears.

The Shoulder should be snugly in the carcass; it should be covered with a well-developed muscle down to the

knee, below which it should possess a fine and flat bony structure.

The Chest should be bold and prominent, wide and deep, furnished with a deep but not a coarse dewlap.

The Carcass should be barrel-shaped, having a top level and broad, especially across the hip, the ribs should be well rounded, the space between the last rib and the pin should not be too short, yet at the same time we must guard against too much length; there will, however, be little cause for objection if the rib is well rounded and the bone flat, for it will add weight to the animal in a good part. The flank should be full and pendant.

The Hind Legs should be full and fleshy down to the hock, with a well-developed buttock, showing great substance, but below the hock we require a fine and cleanly-formed bone.

The Tail should be finely formed, without much hair.

The Hide mellow to the touch, covered with a fine yet plentiful coat of hair.

Animals thus developed in all these points will be alike gratifying to the eye of the connoisseur and profitable to the grazier.

Bulls have a natural tendency to show points of failure which are not observable in bullocks; and, taking all breeds into consideration, this is most frequently noticed by a deficiency in the hind quarters of the animal. Whilst, however, we should endeavor to obtain a bull as perfectly formed as possible, it is especially desirable to secure a full, I might almost say an excessive, development of any part which may be deficient in the cows or heifers he is to be used with. If they are weak, either in the fore or hind quarter, or if deficient in size, this may be remedied by selecting a bull distinguished for possessing these properties in an unusual degree.

It is in this respect that the extensive breeders have such advantage over those keeping smaller herds. It is

necessary for them to keep three or four bulls, and very often they have more. The consequence is, that a selection can be made in such cases according to the deficiency of the heifer or cow; whereas, where only one bull is kept, this cannot be done without involving the expense and trouble of sending to a distance, and often this is not available. It is a matter of doubt with some how far an increase of size obtained by using a large bull can be done with safety to the females producing the calves. No fear need be entertained on this ground. The female *alone* determines the size of the calf at birth, but subsequently a larger growth shows the increase of size derived from the sire.*

The possession of a good form and desirable qualities is not all that is necessary to be noticed in selecting a bull for producing breeding stock. We have also to observe how far this character has been held by his parents. Cases are frequent in which *inferior* cows have been put to *first class* bulls, and the produce has rivalled the sire for beauty and perfection; but such an animal, although possessing in an eminent degree the formation of body which is desired, is totally unfit for being used as a bull. Here we have the explanation of the fact that many bulls which are most pleasing to the eye are noted for throwing inferior stock.

The explanation is clearly this, that the maxim of "like producing like" is modified by another law—viz, that animals have varying powers of hereditary transmission, dependent upon the degree to which certain peculiarities of character may have been concentrated within them. As I have before said, every successive generation "*in the line*" will possess, in a greater degree, the power of transmitting certain peculiarities; and immediately such an ani-

* A large male has a great deal of influence on the size of the calf, as well as of the young in other animals. Well-known instances occur in the dog and the sheep. The mothers are often lost if the disproportion between the male and female is too great. When small heifers are served with too large a bull, it is always attended with difficulty and danger.—J. D.

mal is crossed with a cow which has no such power, in consequence of *an irregular line* of descent, the bull exerts the greatest influence, and the progeny fully partakes of his character.

The quality of the produce is improved even more where this difference exists, than if a superior cow had been used. Lord Spencer noticed this many years ago. He says,* "It is admitted by every one that the qualities of the offspring are usually similar to those of the parents, either combining, in various proportions, the qualities of both parents, or taking entirely after one. I should say, as regards cattle and sheep, that in most cases the qualities of the male parent predominate in the offspring. I have also observed that the worse bred the female is, the more this will be the case when she is put to a well-bred male." This principle had been previously advocated by Rev. H. Berry in his celebrated Prize Essay on Breeding. It is therefore as important to see the parents of the bull as the animal itself; and no one pretending to any degree of careful breeding should neglect this point. Here we again observe the value of pedigree, which is so justly appreciated by short-horn breeders, who well know that any taint in the descent often reappears after several generations, to the prejudice of the stock.

An error is frequently committed by breeders of stock of *medium merit*, from not being particular as to the bull first used for their heifers, considering that as an heifer's calf is not generally desirable for stock, so it is not important to select a good bull. There is, however, little doubt but that the character of the bull *first* used gives an impress to the entire produce of that animal, even although later calves are got by other bulls. The *temper* of the bull should not be overlooked, for it is established beyond all doubt that this is hereditary in the stock, and it influ-

* *Journal of the R. A. S.*, vol. i., p. 24.

ences considerable difference on the tractability, as well as the disposition for fattening, of all the descendants.

Breeding for Dairy Stock.—This requires a modified course of management. It happens, very unfortunately, that our best milkers are not generally our best fattening animals. It does happen sometimes that both points of excellence are combined in the same individual; but these are, generally speaking, cross-bred animals: for instance, the half-bred Guernsey or Alderney heifer are often remarkable for this, especially when crossed with a good Devon or short-horn bull. It would seem as if in such cases the dam gave the milking disposition, and when this is stopped, the aptitude of the sire for fattening made itself manifest. This is just what our knowledge of the principles of hereditary transmission would lead one to expect. In the heifer the tendency to give milk is strong, and has been a characteristic feature for many generations; it has therefore become powerful; whereas the influence conveyed by the bull is exceedingly weak, for his predecessors have been distinguished by little disposition for milk; hence, the power of communicating milking tendency being stronger on the side of the dam than the bull, she imparts her character to the offspring. The opposite is the case with the tendency to produce fat: here the bull is strong and the cow weak, consequently he is able to impart to the offspring an aptitude for producing fat similar to that which he possesses himself.

There is no necessity why these valuable tendencies should not be combined in the same animal much more frequently than at present; and I deem it so important a point, that I shall draw attention to the principles involved in the production of milk. From the analysis already given, the reader will see that milk contains the nutritious and heat-giving elements of the animal's food. It is interesting to observe the changes which the food undergoes

in its transition to the body of the young animal, for the *same* elements pass through a series of transformations. We find them

In Food, as	In Blood, as	In Milk, as	In the Body, as
Gluten,	Fibrine & Albumen,	Cheese,	Muscle,
Sugar and Oil,	Fatty Matter,	Cream,	Fat,
Mineral Matter.	Mineral Matter.	Saline Matter.	Bone.

The blood is derived from the food, and then transformed, either directly into the body of the animal, or indirectly through the intermediate stage of milk. Thus the same materials are needed in either case.

It might be presumed that as we know the elements required for milk, it is only to increase the food of the cow in either particular, and the effect will be evident in the production of milk. This, however, is not strictly true; for, although we may carry into the system an increased quantity of those matters which yield cheese or butter, yet it still depends upon the animal economy either to mould these elements into the cheese and butter we wish, or else into flesh and fat. This is quite dependant upon the natural disposition of the animal, and this is the keystone on which all depends. Thus, although *the same food* will in one case produce flesh and fat, whilst in another it will yield butter and cheese; still, when the tendency of the animal's system is thus marked, we can increase the product by presenting in the food an additional quantity of the elements required. It is clear, therefore, that the first point to be secured is this tendency in the system to co-operate with us. In this respect cows differ; but it is worthy of remark that these peculiarities are hereditary. If, therefore, we have a well-bred cow, with a tendency to produce an abundance of good milk, such a cow would, in all probability, impart to her produce a similarity of character.

The points which especially indicate good milking character must be noticed. The most prominent of these are the vessels which co-operate in the production of milk.

These consist of the vessels which bring the blood, the glands which separate the milk, and the veins which carry away the blood when thus acted on. Of the former, I may name those veins which show themselves between the bearing (*vulva*) and the udder. These are often buried so that they cannot be seen; and although on pressure immediately above the udder they frequently appear, yet we must not immediately condemn the animal as a bad milker when they cannot be observed. Generally, if the skin is mellow, and not much fat present, these veins show themselves readily. Their presence is very desirable, and when combined with a full development upon the surface of the udder, they indicate a free supply of blood to the milk glands. It is also considered a good point when these veins present a knotty appearance.

The milk glands are situated in the upper portion of the udder, and are generally four in number, each gland being in connection with its own quarter of the udder. The udder should be capacious, extending well behind the legs, and also forwards under the belly; the coat should be thin, with a soft skin, and show considerable decrease in size after the animal is milked. The teats, which are the channels from the four reservoirs in the udder, should be placed well apart from each other, and not cramped together, for this generally indicates a want of capacity in the udder. The udder may appear large, and yet be found fleshy rather than capacious. After the blood has been acted on by the glands, it is conveyed away by the veins; but none of these can be seen externally. The milk vein, which runs along the side of the belly, has been so called from its supposed connection with the udder; but such is not the case. Especial attention is desirable to the mellowness of the skin, and more particularly if the animal is poor. This vein is a sure indication of the quantity of blood supplied, and for all practical purposes may be taken as a guide.

Some attention has also been given within a few years

to a discovery made by Mons. Guenon respecting "*the escutcheon*," as it is termed. Like many other persons, he was carried beyond the boundary of discretion in his speculations, and thus his valuable observations were for a time lost in the mist with which he enveloped them. Sufficient is already known of its value, at least, to lead us to the conclusion that it is worthy of more general knowledge. It can scarcely have escaped the reader's notice that the hair on the buttocks of cattle grows in two directions—one portion pointing upwards and another part downwards, and thus producing a sort of fringe at the point of juncture. This hair, which has an upward tendency, has been termed "the escutcheon." A very extended observation has proved that, *other conditions being equal*, the modification of form presented by the escutcheon will lead to an estimation, not of *the quantity* of milk which the animal will produce, but also of *the time* during which the cow *will keep up the supply* of milk. Without going much into detail upon this point I may briefly state,* that the larger the extent of the escutcheon the greater is the promise of milk, and also of its continuance, even after the cow is again in calf. A cow may have a small escutcheon and yet be a good milker; but observation leads to the conclusion, that if she possessed a more fully developed escutcheon she would have been a better milker. It may be considered a point of merit, not as *deciding* whether or not the cow is a good milker, but rather as an additional indication, which may be taken into consideration in conjunction with other characteristic points. It is also desirable, in estimating the extent of the escutcheon, to make full allowance for the folds in the skin, otherwise a large escutcheon may be taken for a small one. Besides the escutcheon, there are tufts of hair (*epis*) which have a

* Those who wish to examine this more deeply, may advantageously consult "*Traité des Vaches, Laitières*," par T. GUENON; or also, "How to Choose a Good Milk Cow," by J. H. MAYNE and JOHN HAMMOND.

certain degree of value, when seen upon the udder of the cow.

With this safeguard, we might anticipate no difficulty in transmitting a disposition for producing milk, especially as we know these characteristic features are hereditary. But we must remember that there are hereditary influences conveyed from the bull as well as the cow, and hence an opposite character is often given to the produce by virtue of the bull's character. It may cause a degree of surprise to some that the bull should have an influence on the *milking* properties of his produce; but there is not the slightest doubt of such being the case. A bull, the produce of a good dairy cow, would favor this character being shown in his offspring; and should he be bred with another good milker, *he would confirm this tendency* in the young calf; whereas, if he was descended from a family of bad milkers, *he would lessen the dam's influence* in this respect. It is here that Monsieur Guenon's discovery promises to be of great service, because we find the escutcheons seen upon the bull indicate a tendency to convey to his offspring the same peculiarities which they represent when seen upon the cow.

I have before casually remarked that our improvements in the breed of cattle have been accompanied with a decreased capability for breeding; and the same remark holds good as regards the milking tendency; and therefore it is a greater stimulus for the exercise of care, and such attention will be ultimately rewarded. There is nothing essentially contradictory in the endeavor to combine, in the same animal, milking as well as fattening properties. Many of our dairy cows are distinguished by *both* these conditions. In our high-bred animals we find a small liver and a small lung, accompanied with a gentle and peaceful disposition. Now, these conditions, which are so desirable for producing fat, are equally favorable for yielding butter and cream. These diminished organs economise the consumption of

the carbonaceous matter in the blood, hence more remains ready for conversion into fat, but equally prepared for yielding cream if the tendency of the animal is favorable to the same. Having, therefore, by these means got the blood well charged with the materials from which milk and cream may be prepared, it only remains for the animal to secrete the milk freely, and the most economical results are realized. It is true, we may store the blood with materials ready for yielding a rich milk, but if the milk glands are *inactive* or *defective*, then the stream of blood passes over them, and yields but little of the very secretion we want. In many of our high-bred cows, not only are the breeding powers weak, but the milk glands sympathize with the general torpidity of this part of the system; and hence, although the blood may be charged with milk-forming matter, yet in consequence of the *inactivity* of the milk-glands, these fail fully to separate it; and the result is, that materials which might have been separated as milk and cream, pass on unappropriated, and probably become formed into fat and muscle.

The Breeding of Beef-producing Stock.—Practically this will be carried out with the local breed of cows; and if these are selected with judgment, and judiciously crossed, useful stock may generally be raised. Well-selected dairy cows will generally, *for this purpose*, be found equal, if not superior, to cows of the highest breed, by giving more weight, a larger frame, and hardier constitution; and, being good milkers, will rear their calves better. It is also very important, for producing well-developed stock, to breed from cattle capable of yielding to their calves the full nourishment required. In every case the bull should be of *very superior* character, and cannot be of too good quality. The objection which I have named as regards the cows does not apply here. On the side of the sire, we should endeavor to secure the *very best qualities*, whilst the

dam should be adapted *for breeding them to perfection.* It is a serious error to select an inferior bull for such a purpose, and only a matter of surprise that any of our class —who are generally such shrewd calculators of profit— should ever be found to adopt a practice manifestly indiscreet.

The destination of such stock should be for beef, because it is in the *first* produce you secure the advantages of both parents, but you cannot with safety use them for breeding purposes, as the *second* cross is generally an animal of very inferior quality. In the first produce we secure the advantages without the disadvantages, but the second cross is very inferior.

Throughout the entire period of growth the course of feeding should be liberal and generous, calculated to promote a progressive development of the body from the time of birth until consigned to the care of the butcher.

THE MANAGEMENT OF CATTLE WHILST BREEDING.

Having succeeded in getting the heifers in calf, it becomes necessary to give them a more liberal course of feeding, but the change must be gradual. They have now not only to render their own bodies complete, but also to nourish and support another animal which is daily increasing its demands on the system. Supposing the heifer to be running loose in the yards or sheds, they will now receive a few roots with their straw, and generally some hay. They must be watched to prevent any unruly or vicious one of the lot annoying or injuring the others; and separation must be made accordingly. After they leave the yards, pasturage of *medium* fertility will be best for them, so as to allow them to live well and keep in good condition without being absolutely fat. In this manner the size of the calf at birth is very much held under control. If the heifers are fed highly, the nourishment of the blood renders the growth of the fœtus more rapid than is desirable

and the result will be a largely grown calf, which is especially dangerous for heifers. It is the food which the heifer receives during this period which determines the calf's size, rather than the sire, as is often supposed. Whilst, therefore, we guard against this *dangerous* error, we must not keep the heifers short of food, or we shall have weakly calves produced. A moderate allowance of food will be far better than either extreme. An animal which is in high condition is far more liable to disease after calving. Prevention, however, being better than cure, it should be our object to follow the happy medium of giving them keep of sufficient quality to support them in good condition, but not overdo it by making the heifers fat.

Injuries frequently happen during this stage from the animals driving each other; this will arise when one or two bad-tempered ones happen to be amongst them. Goring with the horn upon the flank is a frequent cause of injury to the calf, especially in causing the heifer to strain herself in her attempts to escape. Running over steep land, and jumping over gutters in meadows, when tormented by the fly, are all conducive to the same end; it may be the loss of the calf, or else a disarrangement of the calf, which produces at the time of birth a false presentation. The false presentations are often accompanied with difficulty to the operator, and danger both to the dam and offspring. Too much care and caution cannot be taken to avoid injuries such as these during this period, as much loss and suffering may be saved thereby.

Abortion may be looked upon as one of the greatest difficulties of this period.* Entire herds often lose their calves from this cause; and it often ranges through large

* It is not so common as is usually imagined, for cows which have once slipped calf continuing to do so afterwards. It altogether depends upon how it is brought about. If it arise from contagion from cows which have slipped their calves, the risk is no doubt great; but it is by far the greatest risk if the cow is predisposed, or weak of constitution—when the generative organs are not only weak, but highly sensitive at the same time. On the other hand, when it arises from accident—such as jumping, being gored, surfeit or indigestion, a chill, or water after being heated—there is little fear of apprehending abortion, if ordinary precaution is exercised.—J. D.

districts. Its causes are varied, and claim our attention. During the time animals are breeding, the imagination and senses are peculiarly susceptible of external influences. Of all the senses, probably that of smell is most energetic; and thus we find effluvia, which at other times is disregarded, is now perfectly offensive. In consequence of this, we frequently find that after heifers have been kept in situations rendered disagreeable to them by such a cause, the system becomes so excited as to produce an abortion of the calf. Some smells are much more exciting than others, and more prompt in their influence—such, for instance, as the smell arising from a newly-born calf or a fœtus. I have known a heifer throw her calf (and the fœtus not being found, for the tract of ground was large), and it so affected the remaining fifteen, that within three or four days all had suffered abortion. An accident which causes a single cow to throw her calf may thus be the occasion of spreading it amongst a large number of its companions, in every other respect free from such attack previously.

It is also more frequent in some seasons than others, and certain districts are also peculiarly liable to its appearance. In a moist climate—such as that of the west side of England, and especially the south-west portion—cases are much more common than in the drier districts of the east of England. No doubt this is excited and produced by the fungi which are found on our grasses, which appear to possess a power somewhat similar to, but milder than, the ergot of rye. I had on one occasion no less than twenty dairy cows and fifteen heifers under my care, and of these no less than thirty had previously slipped their calves during that season. The course I adopted was to stop breeding for twelve months, and in the mean time dispose of all that had slipped calf. I also had the buildings whitewashed, and other disinfectants were used. During the twelve

months the ground was kept as clear as possible of any but feeding bullocks. At the end of this period I was able to recommence breeding with safety and success; but when it became so general, no other course appeared to be of any avail. It is by prompt attention to the *first* appearance that we have the best chance of success.

If an animal has slipped her calf she should be kept as if suffering from a contagious disease. Let all *breeding* stock be kept away from the field or shed in which it may have happened for a few weeks. If this cannot be done, and the building must be used, let quicklime and some chloride of lime be used freely before the stock are allowed there. The animal will, of course, have been removed to a place by herself for further treatment. This will consist in washing the hinder parts with a weak solution of chloride of lime, and giving her ½ lb. or ¾ lb. of Epsom salts, and a ½ drachm of powdered ginger. She should be fattened and disposed of forthwith, as she is almost certain to slip her calf again. I believe this is a source of great trouble, which breeders often bring on themselves. A very choice heifer slips her calf from some accident, and she is retained to have one more trial, and, unfortunately, gives proof of the truth of the maxim, "one infected sheep will taint a flock." I know it is very uncongenial to our feelings to part with the favorites of our herds, but judgment must govern our feelings, if mischief is to be prevented. This is a disease in which *half* measures are perfectly useless; the course of proceedure here requires resolution and vigorous exertion of the same.

Earl Spencer has published* a number of most interesting observations with respect to the probability of cows holding in calf for certain periods of time, and also of their producing live calves. His Lordship was thus able to calculate the probable number of live calves he might expect within certain periods.

* *Journal of the R. A. S.*, vol. ii.

We may now assume that the heifer has been brought towards the period of her calving, which generally happens from about 280 to 285 days from the time of conception. Lord Spencer has also aided us with a very extended series of observations, showing the influence which the sex of the calf has upon the time the cow goes in calf. Lord Spencer adds, that no live calf was born earlier than 220 days, nor later than 313; nor was he able to rear any calf born less than 242 days. He considers any calf born earlier than 260 days decidedly premature, and any date longer than 300 days must also be considered very irregular. From 280 to 285 days is the more general time, at which age the sex of the calf does not appear to vary much. Those calves which were born within the preceding five days were principally heifer calves, in the proportion of 3 to 2; whereas those which were delayed for the same time were principally bull calves, in the same proportion of 3 to 2; and as the delay increases the proportion of bull calves increases, except when we come to those *extreme* instances of delayed parturition, when the calves appear to be all female.*

When the period approaches for calving, the heifer should be prepared for it by keeping the bowels in healthy action and the blood cool. With this view each heifer should have 12 ounces of Epsom salts, ½ drachm ginger, and ½ drachm of carraway seeds in the preceding week, and repeated if not found effectual in relieving the bowels.† With this preparation we may await the time of calving. The depression on either side of the rump-bone, together with the appearance of waxy matter on the teats, are symptoms of approaching calving. Having provided the heifer with a convenient loose-box,

* The age of bulls influences in a very considerable degree the sex of cattle. Old bulls get heifer calves in the proportion of 3 to 2, and young bulls *vice versa*.—J. D.

† Bran-mashes, with a very short allowance of fodder, is the best preparation before calving. If any thing else is required, 1 to 1½ lbs. of molasses diluted in water may be given once a day. If a cow has had a bad time, then 1 lb. of Epsom salts, along with 1 lb. of molasses, and ½ oz. of ground ginger.—J. D.

she should be left to herself. When the labor-pains have been on her for half an hour or an hour, the man usually attending her may quietly examine the progress, and continue to do so every half hour subsequently, avoiding as much as possible causing any disturbance to the animal. As soon as the calf is making progress towards delivery, let him carefully try if the calf is in a right position; that is, with its two fore-legs protruding, and the muzzle of the nose resting upon them.

Having satisfied himself that all is right, let him give the heifer plenty of time for making a passage for the calf. It should be remembered that the bones of the pelvis have to yield for the passage of the calf, and it is much safer to allow Nature time for effecting this herself, and in her own superior manner, rather than endeavor, by applying force to the calf, to make a passage by other aid. Much mischief arises by persons being in too much hurry about these matters. The great point is to be assured that the calf is in the right position, and then give the heifer every opportunity of aiding herself. When the fore-feet show themselves assistance may be given, but even then not with that violence which is so often used. Excessive strength is quite needless, and is productive of much injury. A firm and steady pull at the fore-legs simply to prevent any return of the calf when the pains cease, and also to aid the calf forward when the pains return, will be of great service to the heifer, whilst an over-eager application of strength, often almost enough to carry the heifer away, is worse than useless.

In case of false presentation much suffering and loss will be saved by calling in a veterinary surgeon. I should prolong this report beyond its proper limits if I were to go into this branch of the subject.

As soon as the calf is born, see that it can perform that new function of life—breathing. Up to this time this has

not taken place, but now it has lost the warmth of the mother's body, it requires another supply of heat, and this is produced by the process of respiration. Any film over the nostrils should be removed; and if the calf cannot draw breath, it should be done artificially by blowing down the throat, and the lungs, having once expanded, will probably continue to act. If the birth of the calf has been tedious, it may be much exhausted. In such cases, a little gin and peppermint may be given in some gruel, but if it can be avoided with safety to the calf, it is preferable to do so. The calf should now be drawn to the heifer's head, and she will amuse herself by cleaning it. Shortly after, some warm gruel should be given to the heifer, and followed by a bran-mash; but if she appears much exhausted, the gruel should be given quickly. In case of protracted labor, thirst should never be allowed to continue, but occasional draughts of warm and thin gruel may be advantageously given.

Having traced the proper management of cattle from the period of birth until they have produced a successor capable of following a similar course, I shall proceed to notice—

THE MANAGEMENT OF COWS AFTER BREEDING.

After the delivery of the young calf, our management of the dam must be of a preventive rather than a curative character. The cow, having been refreshed by the bran-mash and gruel given, may be safely left for a time quiet and undisturbed. In the course of two or three hours she should be drenched with 12 ounces or a pound of Epsom salts, mixed with 1 drachm powdered ginger, and 1 drachm carraway seeds. If she has had *an unusually bad time*, it will be desirable to give it rather sooner, and combine with it one of the following fever powders, consisting of—nitre, 2 drachms; digitalis, ½ drachm; tartarised antimony, ½ drachm. These are calculated to check any tendency to

fever in the system; for it must be remembered that the heifer has undergone a very severe strain upon the system, and the appearance of inflammatory action is therefore to be guarded against. The fever powder should only be added *after cases of difficulty*, in which the animal may have suffered badly; for, in ordinary cases, the former drench will generally be found sufficient.

The after-birth (or *placenta*) will probably be thrown off within twenty-four hours, but it may remain several days. The appearance is the greatest annoyance, for it does not seem to inconvenience the animal. It is better to avoid the removal of it by hand, although this must be done if it appears to cause irritation and inflamation. A small weight is often tied to the after-birth, if it is not thrown off it proper time, and this gentle pressure tends to its removal. Many are in the habit of giving irritating and exciting cleansing drenches, which are productive of much harm. If anything is given, probably a pint of good ale in some gruel is as good as anything. The object should rather be to prevent all further excitement, and to quiet the system as much as possible.

The drop after calving is one of the earliest and most serious attacks to which the cow is subject. Here, however, is a case for the attentive care of a veterinary surgeon, and no time should be lost in securing the same.

Attention should also be given to the state of the udder and the flow of milk. In some cases the udder feels hard and lumpy. This requires gentle friction, with some softening ointment, such as elder-flower ointment. If this friction be repeated two or three times a day, and the calf allowed to suck immediately after, it will probably become supple in a short time. Many persons allow the calf to run loose, and suck the cow at liberty, and in slight cases this generally answers. The udder must still be watched, and if not relieved by this plan, it should be rubbed by

the hand as before directed. Warm fomentations are useful, but unless care is taken there is some danger of catching a cold afterwards, thus only increasing the original evil. These warm fomentations should always be followed by the use of some lard or elder ointment, which lessens the risk of inflammation. Any sudden loss of milk, or any great decrease in its quantity, must be carefully attended to, for there is always risk to the animal. Cloths soaked in warm water must be applied to the udder, and one of the fever powders given to the cow, together with a dose of Epsom salts. The return of the milk will be the first sign of improvement, and this should be drawn off as fast as it comes into the udder. The drench recommended above may be generally given to cows when the milk lessens, because this almost always arises from inflammatory action in the system.

Soreness of the teats is often observed in cows, and if neglected has a tendency to injure the temper, for the painful handling is almost sure to make them kick; and if the cause is not remedied, they become bad-tempered and permanent kickers. Any soreness should have *immediate* attention, and the following ointment is very purifying and healing. It should be applied to the teats after the cow has been milked, and the part washed before the next milking:—Melt together 6 ounces of lard, and 2 ounces of bees' wax, and 3 ounces of olive-oil; and, as they cool, rub in 2 ounces of sugar-of-lead, and 2 drachms of alum. These substances should be *finely* powdered, and well mixed together before adding to the melted lard.

The early precautionary measures having been taken for the preservation of the cow's health, we may presume that she is progressing favorably, and rearing her calf. After a few weeks she will again come into season, and be ready for taking the bull. This time, however, we shall be comparatively free from those difficulties which attended us at this stage previously; for, having once produced

a calf, the animal becomes more adapted for doing so again. Should any difficulty arise in this respect, we cannot adopt the usual remedies as freely as before; for now we must remember that we are dealing with an animal *producing milk*, upon which the calf is dependent. Besides this, any imprudent step which checks the milk is always felt by the animal when the same period returns, therefore the loss of the cow's milk would depreciate her subsequent value. But the greatest danger from the loss of milk is upon the animal herself; for if the milk-glands cease to act, the effect on the system is most dangerous. I should, in any case of difficulty, adopt the plan of using the bull twice, as before recommended, in preference to any other plan; and this will be found almost always to overcome the difficulty, especially if she is put to the bull when *first* she appears ready.

When the cow is far advanced in calf, it is necessary to stop milking her, in order that the entire nourishment of the system may be shared between the growth of the calf and in giving fresh vigor and strength to the dam. It is usual to give two months' rest, but with high-bred stock, which do not nourish their calves very well, three months is decidedly better. We thus divert the nourishment which would be drawn away as milk, and the result is a great improvement in the calf, the cow is prepared for the delivery of her calf, and the subsequent flow of milk is improved. In the later months the calf requires a very considerable amount of nourishment, and, when a well-developed animal is sought for, we should encourage its formation by drying up the milk.

It now remains for me to notice the mode of feeding, and system of management, to be adopted whilst producing milk. I shall presume that the calf is born in one of the early months of the year, and from this period the cow will be kept in a comfortable building until the grass is ready in the spring. Moderate exercise is desirable, if it can be

given; still shelter is even more important; but their combined influence is best. Many have not the opportunity of giving exercise under shelter, and frequently cows are put out into an adjoining field for an hour or two during the day; and instead of their taking exercise, they stand and call for their release from the cold. When thus turned out from warm and ill-ventilated cow-houses, as is too frequently the case, they suffer much more than when kept in healthy and moderately-sheltered boxes or stalls.

It should be remembered, that whilst too much warmth weakens the animal, and renders it more subject to disease, the opposite extreme of cold draws upon the food for supplying additional heat to the body, and consequently less remains to yield cream. It is therefore economical to shelter a milking animal from the cold; but at the same time we must not economise heat to the prejudice of the health and comfort of the animal. We may take it as a rule that, so far as we can promote the health and comfort of the animal, so far shall we succeed in rendering the cow more competent for the support and development of her calf.

The *food* of the cow during this period claims our notice; for we can exercise great control over the milk by regulating the food from which it is produced. Succulent food, such as mangold-wurzel, and brewers' grains, &c., always produces a large *quantity* of milk; but it is not quantity alone which is important to the calf. The *quality* is the chief point for this use; and here we find good hay and linseed-cake showing themselves in a very marked manner, and producing a much larger-produce of cream. If, however, the requirements of the dairy render the production of cheese desirable, we have to look at the quantity of curd produced; and here we shall find the importance of exercise, and such food as clover, hay, or vetches. If, in such a case, artificial food is given, bean or pea meal

would be the best for producing *quantity* of cheese, but the addition of linseed-cake to the food would very much improve the *quality* of the cheese. Here, as in many other instances, the object in view must determine our course of management, for the food must contain the materials we want,—whether it is water to give quantity, or rich oily matter to produce cream, or highly nutritive matter to yield cheese,—for they cannot substitute each other in their modes of operation or uses.

It is also worthy of comment that, whilst exercise has a tendency to increase the quantity of cheese, it deteriorates from its richness. Hence we find our richest cheeses are made from strong and fertile land, where the cows take only a moderate degree of exercise, whilst those hilly farms, which render more active search for food necessary, gives proportionately more cheese, but it is of inferior quality. Exercise cannot fail to use up, by respiration, a certain quantity of carbonaceous matter, which would otherwise be appropriated to the milk; and it is simply a question of the supply of oily matter being decreased on poorer land, by being used for another function of the body which exercises a prior claim. This would lead one to anticipate that, for the production of cream, our stall fed cows would be superior to others, whilst, for a cheese dairy, a greater amount of exercise is desirable, and the practice of our dairy district strongly confirms such an inference.

I have thus endeavored to bring before the reader the leading points connected with the breeding of cattle. I have traced the calf through its successive stages of growth until it has produced a successor capable of again performing the same circle. I have noticed the management most desirable for these several periods, and the principles upon which such practice is based, together with the disease to which each age is peculiarly liable.

There is no branch of rural economy of greater importance to the interests of agriculturists. It is a subject which demands our careful attention, and it will reward our zealous endeavors to make the functions of animal life subservient to our requirements.

THE SORGHUM SACCHARATUM—ITS COMPOSITION.

[The following Essay on the Sorghum Saccharatum, or Chinese Sugar Cane was furnished to the Transactions of the Royal Agricultural Society of England, by one of the most distinguished Agricultural Chemists and experimenters in Europe, Dr. AUGUST VOELCKER, and it has been selected for this volume of Transactions as the only method of placing the information it contains, and which has been much sought after, before many of those who are interested in the culture of that plant, both for feeding purposes and to manufacture sugar from it. During the past three years the Society has offered a premium for an essay on the culture and economical method of manufacturing sugar from the Sorghum, but no one has as yet made any response.—SECRETARY.]

The cultivation of the North China sugar-cane, sorghum saccharatum (holcus sacchartus), the sorgo sucre of the French, has of late attracted much attention. During the past season it has been grown in many places in England by way of experiment.

This new graminaceous plant appears to be cultivated largely in several parts of North America, where it has attracted much attention on account of the sugar which it contains, and likewise on account of its adaptation to the distillation of spirit and the preparation of fermented liquors. It is a beautiful looking grass, resembling in appearance Indian corn. In favorable climates it comes to maturity in a single season, and reaches a hight of from 12 to 16 feet. Sorghum sugar, when refined, is identical in composition and quality with sugar-cane. Sorghum saccharatum is recommended chiefly as a new material for the manufacture of sugar, and likewise as a nutritious and fattening food for horses and cattle.

The sorghum which was used for analysis was grown on

the Royal Agricultural College Farm. The seed was drilled on the 13th of May, in rows 14 inches apart, and at a depth of about 3 inches. It came up well and evenly. The plants appeared to grow vigorously throughout the summer, and reached a hight of about 5 feet by the beginning of October. A patch of about 1-4 acre furnished a good deal of green food to cattle, which seemed not to relish it at first, but towards the end of September grew very fond of it. The soil on which the sorghum was grown was in good condition, of moderate depth, and, like most soils in our neighborhood, contains a good deal of lime and clay, and scarcely any sand. The preceding crop was potatoes. As this crop had been heavily manured, no farmyard dung was put on the land this season, nor was any other manure employed, except some ashes from burnings of roadside parings and the clippings of hedgerows.

The sorghum was submitted to analysis at two different periods, namely, on the 23d of August and on the 26th of September, 1859.

COMPOSITION OF SORGHUM, ANALYZED AUGUST 23D.

Water.—At this time the plants had no proper stems. The stalks consisted merely of leaves rolled up, which could be entirely untwisted.

As there was a good deal of adhering water on the leaves, it was necessary to unroll all the leaves, and to dry them with fine blotting paper, before making the water-determination.

Deprived in this way of all accidental water, 1000 grains of finely cut plant left, on drying in the water-bath, 148 grains of dry matter. The plants consequently contained 85.20 per cent. of water.

In a second determination, 85.15 per cent. of water was found.

The mean of the two water determinations is 85.17.

Ash.—18.61 grains of perfectly dry substance gave 1.41

grains of ash, or 100 grains contained 7.57 grains of ash. In the natural state the plants thus contained 1.12 per cent. of ash.

Protein Compounds.—Burned with soda-lime, the dry substance was found to contain 2.75 per cent. of nitrogen, which is equal to 17.18 per cent. of protein compounds. In a second nitrogen combustion, 2.78 per cent. of nitrogen was obtained, which is equal to 17.37 per cent. of protein compounds. The mean of these two nitrogen determinations is 2.76 per cent., equal to 17.27 per cent. of protein compounds. In the natural state sorghum contained according to the first determination, .407 per cent. of nitrogen, equal to 2.544 per cent. of protein compounds; and .412 per cent. of nitrogen equal to 2.575 per cent. of protein compounds, according to the second determination.

According to these determinations, the general composition of the sorghum on the 23d of August may be represented as follows:—

	First Experiment	Second Experiment.	Average.
Water,.....	85 200	85 150	85.175
Nitrogenized organic matter (so called flesh forming matter),.....	2 544	2 575	2.559
Substances free from nitrogen, and fitted for the support of animal heat and the formation of fat,.....	11 136	11.155	11.146
Inorganic matters (ash).....	1.120	1 120	1 120
	100.000	100 000	100 000

And that of sorghum, dried at 212° F.:—

	First Experiment.	Second Experiment.	Average.
Nitrogenized substances,.....	17 18	17 37	17 27
Non-nitrogenized matters (heat and fat producing matters),.....	75 25	75 06	75 16
Inorganic matters (ash).....	7 57	7.57	7 57
	100.00	100.000	100 000

I have likewise made a complete proximate analysis of

the sorghum; and, with a few modifications, followed the process which will be found described in detail in my Paper on the Composition of Parsnips and Belgian Carrots. (See Journal of the Royal Agricultural Society of England, vol. xiii., part ii.)

The following table contains the results of the detailed proximate analysis of the sorghum :—

DETAILED PROXIMATE COMPOSITION OF SORGHUM SACCHARATUM ON THE 23D OF AUGUST.

	In Natural State.	Dried at 212°.
Water,	85 17	
*{ Albumen,	.36	2.42
*{ Other soluble protein compounds,	.90	6 06
Mucilage, pectin, and digestible fibre,	6.63	44,71
Soluble mineral matters,	.81	5 46
†Insoluble protein compounds,	1 25	8 43
Indigestible woody fibre (cellular),	4 57	30 81
Insoluble mineral matters,	.31	2.09
	100.00	100.00
*Containing nitrogen,	.21	1.71
†Containing nitrogen,	.20	1.35
Total quantity of nitrogen,	.41	2 76

It will be seen that the sorghum contained a good deal of nitrogenized matter at the time when the analysis was made, but no sugar whatever.

The taste of the plants on the 23d of August was anything but sweet. I did not expect, therefore, to find much sugar, but I was unprepared to meet with a total absence of sugar. In order to verify this fact, I caused a direct sugar-determination to be made in a fresh and large quantity of the whole plant, but was unable to detect any appreciable quantity of sugar.

Horses and cattle to whom the plants were given, at first refused them altogether, and after some time partook only sparingly of this food. They evidently did not relish it.

There can be but little doubt that the sorghum was quite unripe by the end of August, and was unfit for feeding purposes.

It is worthy of special notice that the plants contained no sugar at that time. Last summer was unusually hot,

but, notwithstanding, the plants were quite unfit for feeding by the end of August.

Fortunately, the last week in August and the month of September were warm; the plants therefore continued to grow vigorously, and formed perfect stems, which to the taste were sweet when examined on the 26th of September.

COMPOSITION OF SORGHUM ON THE 26TH OF SEPTEMBER.

The plants were cut about 4 inches above the ground. The analysis was made with the whole plant.

a. *General Composition.*

	In Natural State.	Dried at 212°.
Water,	81.80	
Soluble organic matter,	8.16	44.88
Soluble mineral matter,	.74	4.07
Insoluble organic matter,	9.07	49.83
Insoluble mineral matter,	.23	1.27
	100.00	100.00

b. *Detailed Proximate Composition of Sorghum Saccharatum, September 26th, 1859.*

	In Natural State.	Dried at 212°.
Water,	81.80	
*Albumen,	.37	2.03
Other soluble protein compounds,	1.16	6.36
Sugar,	5.85	32.15
Wax and fatty matter,	2.55	14.01
Mucilage, pectin, and digestible fibre,	2.59	14.26
Soluble mineral matters,	.74	4.06
†Insoluble protein compounds,	.66	3.62
Indigestible woody fibre (cellular),	4.05	22.26
Insoluble mineral matters,	.23	1.26
*Containing nitrogen,	.245	1.34
†Containing nitrogen,	.106	.58
Total quantity of nitrogen,	.351	1.92

The sorghum contained, it will be noticed, nearly 6 per cent. of sugar on the 26th of September. Cattle supplied with this grass at the time greedily ate it, and, to all appearances, did well upon it.

The proportion of sugar in the whole plant is about the same as that in carrots.

On examining the stumps which were left in the ground, they were found much sweeter than the upper part of the stems. The difference in the taste was so marked, that I

had made two direct sugar-determinations by the fermentation process.

The first determination was made in the stems cut about 2 inches from the ground. It gave 7.65 per cent. of sugar.

The second was made in the upper part of the stems, cut about 12 inches from the ground. It yielded 3.60 per cent. of sugar, or not quite half the quantity which was found in the lower part.

At the same time I determined the amount of crude fibre (the part insoluble in water) in both cases, and found in the lower part of stems 6.50 per cent. of crude fibre, and in the upper part 13.01 per cent.

We have thus—

Proportion of Sugar and Crude Fibre.

	In Stems cut 2 inches above ground.	In Stems cut 12 inches above ground.
Percentage of sugar,.....	7 65	3 60
" crude fibre,.....	6 50	13.01

This distribution of sugar and fibre in the stems of sorghum is interesting in a physiological point of view. Whilst speaking of the distribution of sorghum, I may state that Professor Buckman observed last September that, whilst the principal or main stem was quite sweet, the stolons or side shoots were still bitter. It would thus appear that this grass does not ripen together; the central or oldest stem is perfect before the lateral shoots. Fearing the central stems might get so hard and woody as to become useless as a cattle-food if left in the ground until sufficient sugar is developed in the lateral shoots, Professor Buckman recommends that the central stems should be cut down first; the lateral shoots will then make rapid growth and gradually become sweet. By this simple expedient, the full benefits from the whole of the crop may be secured.

A comparison of the analysis made in August with that made in September will show several matters of interest. I notice some of the more striking ones.

1. In August the sorghum was much more watery than in September. In the former month it contained, in round numbers, 85 per cent. of water; in the latter only 81½ per cent.

2. Whilst there was a total absence of sugar in August, the whole plant contained nearly 6 per cent. in September in its natural state, or 32 per cent. when dry.

3. Instead of sugar, the sorghum contained in August chiefly mucilage and pectin, which constituents disappeared to a great extent in September, and gave rise to the formation of sugar.

4. The amount of woody fibre is less in the more matured grass than in the unripe plants analyzed in August.

5. The unripe plants contained more mineral matter than the grass in a more advanced state of ripeness.

6. It is particularly worthy of notice to observe the larger amount of nitrogen in the immature grass. In the grass analyzed in August there is .41 of nitrogen, notwithstanding the larger amount of water; whilst in the plants analyzed in September, and containing about 3½ per cent. less water, only .35 of nitrogen was found. It will be seen that the proportion of insoluble protein compounds is considerably diminished in the September produce. The difference in the relative proportion of nitrogen in the grass analyzed at the two periods appear particularly striking, if the composition of the dried substances are compared with each other. It will then be found that there is nearly 1 per cent. less nitrogen in the plants analyzed in September than in the grass analyzed in August.

We have here presented to us a fresh proof that the nutritive value of food of the same kind is not regulated by the amount of nitrogen which it contains, but rather by the proportion of sugar. Indeed, I think it may be safely asserted that all green food, and likewise turnips and other roots, are immature, and more or less unfit for feeding, when they are rich in nitrogen. Fully ripe and very nu-

tritious roots and grass always contains less nitrogen than the same food in an immature state, or than food of indifferent feeding qualities.

A single year's trial, of course, does not entitle me to judge of the agricultural merits of the sorghum saccharatum; but I cannot help thinking that the climate in most parts of England is opposed to its growth in anything like full perfection. Last season we had a fine and warm summer; notwithstanding which, neither the field crop nor an experimental plot in the botanical garden came to full maturity. They scarcely reached 5 feet in height, which is very much lower than the height which this grass is reported to reach in America. I notice in a communication of Dr. Gossman, of Philadelphia, that in America the sorghum reaches a height of 12 to 16 feet, and that it furnishes 70 to 75 per cent. of juice, from which Dr. Gossman obtained 6 to 7 per cent. of good crystallized sugar, besides a quantity of molasses. It appears to me more than doubtful that the sorghum will grow to this height in many parts of England; nor do I think the cultivation of sorghum in England will be remunerative in furnishing the raw material for the manufacture of sugar or the distillation of spirits. However, repeated trials are needed before we can finally pronounce on the value of sorghum for the manufacture of sugar, or on its merits as a feeding stuff.

For the benefit of those who are inclined to give this new grass a trial next season, I append the following remarks on its culture by Professor Buckman, who says:—

"The seed was obtained from Messrs. Sutton, Reading, and sown in the beginning of May. The distance apart was 20 inches; depth (at which seed was sown), not more than 3 inches. It came up soon, and for the first month did not at all promise the fine aspect it afterwards showed; but as soon as the warm nights came it made rapid growth, and we were thus led to infer that too early sowing is by

no means a saving of time, though we are not quite sure whether getting strong plants early, by germinating in a hothouse or under glass with artificial heat, and gradually exposing them to harden before transplanting, would not be advisable, especially where the growth of holcus is attempted in cold, exposed, or late-growing situations; and, in this case, of course the operation of transplantation should be done in wet weather, the saving of seed, and the ensuring of a well regulated eqidistant plant, being taken as no bad equivalent for the extra labor and expense. In this case the crop was hoed, but this is a delicate operation with the sorghum, as it sends out adventitious roots from the joint immediately above the ground, which dip into the soil, and, if not interfered with, aid immensely in forwarding the growth and development of the plant. Hoeing, then, before this process commences encourages it, but by no means can it be properly done when this is in progress. When, however, the new roots are fully established, a careful stirring of the ground between the rows (not between the individual plants) appears very much to facilitate a larger, and, what is more important, a quicker growth."

Royal Agricultural College, Cirencester, Dec., 1859.

ON THE CHEMICAL PROPERTIES OF THE SOILS.

By Dr. Augustus Voelcker, in the Journal of the Royal Agricultural Society of England.

There are many persons who, on reading the papers which from time to time appear in our chemical and agricultural journals on the powers of soils to absorb manuring matters, receive the impression that sandy soils have not the power of retaining ammonia, whilst clay soils are imbued with this property in so eminent a degree, that no amount of rain is capable of removing any of the ammonia absorbed by them.

These impressions, though natural, are not founded on fact. It will be one of the objects of this communication to show by many experiments the fallacy upon which these erroneous impressions are based.

If soluble fertilizing matters were rendered completely insoluble when brought into contact with the soil, it would indeed be difficult to understand the use of soluble manuring matters, or to doubt the policy of resorting to mechanical means of cultivation, such as subsoiling, stirring, &c., which have the effect of rendering soluble mineral matters contained in the soil in an insoluble state. But does not daily experience teach us that such fertilizers are much more effective than the same materials in an insoluble or partially soleable condition?

It has indeed been stated by a high authority, that since soluble fertilizing matters are rendered insoluble in contact with soil, plants must have the power of taking up their food from the soil in some other form than that of

simple solution. It is here taken for granted that soluble matters become quite insoluble in contact with soil. Many people, on being told that plants do no take up their food from the soil in the state of simple solution, assume that they take it up in a solid form.

It is not my intention to expound in this place Baron Liebig's views on the assimilation of the food derived by plants from the soil. The changes which fertilizing matters undergo in contact with soil are, as we know, so numerous and so little understood, and the precise combinations in which mineral food is taken up by plants so little known, that it would be extremely hazardous to propound in detail a new theory respecting the assimilation of mineral food by plants. Baron Liebig, therefore, wisely refrained from expressing his views on this subject in that clear and precise manner which generally distinguishes his writings, and very properly contented himself with indicating that our present views respecting the absorption of mineral matters by plants are not quite correct.

Professor Way's and my own researches certainly have shown that manuring matters in contact with soil undergo remarkable changes, and fully justify the statement that plants do not take up mineral food in the simple state of solution in which we add it to the soil in the shape of manure, but in totally different states of combination.

Again, if sandy soils have not the power of retaining soluble fertilizing matters, it would be difficult to comprehend how, notwithstanding the occurrence of heavy thunderstorms or long continuing rains, the effects of superphosphate or guano, or even sulphate of ammonia, are clearly seen in the increased produce raised on such soils by the aid of these manures.

The quantity of water running through the soil at such times, is amply sufficient completely to dissolve the soluble manuring matters. If it were, therefore, quite correct that sandy soils had not in any degree the power of ab-

sorbing soluble manuring matters, they would be removed by the rain into the subsoil, neighboring ditch, or drain, and could scarcely produce any effect upon vegetation.

Experience teaches us that the same kinds of manure produce very different practical results upon different soils. It must be admitted that the composition of different soils varies considerably, and that this circumstance, no doubt, accounts to some extent for the variations in the practical results.

There are, however, many apparently similar soils, that is to say, soils in which the analysis shows like quantities of the same constituents, such as potash, soda, lime, magnesia, phosphoric, sulphuric and silicic acid, and all the elements present in the ashes of plants, in which, notwithstanding, the same kind of manure produces a different practical result. This appears to me to indicate that the analysis of soils, as usually performed by chemists, does not afford in all cases a sufficient guide to estimate their agricultural capabilities, nor to point out the kind of manure which is particularly well adapted for the special crop which we wish to raise. Even a detailed analysis of a soil gives only the proportions of the different soil constituents, but generally without reference to the states of combination in which they exist in the soil; and is altogether silent on the property possessed by all soils, in a higher or lower degree, of effecting striking and important changes in the manuring matters which are placed upon the land.

That this property belongs to every soil has been recently shown by me and others who have investigated this subject. It has likewise been shown that some soils possess the power of modifying the composition of manures much more thoroughly than others. It is, therefore, reasonable to connect the agricultural capabilities of soils in a great measure with their power of retaining certain fer-

tilizing matters with avidity, and of modifying others in a most interesting and unexpected manner.

It is hardly necessary to dwell upon the importance of an accurate knowledge of the inherent capacity of soils to work up, so to speak, the crude fertilizing matters into new combinations; to allow the free percolation of other —it may be less needful—substances, and to provide for a constant supply of food which is neither so soluble as to injure the produce, nor so insoluble as to remain inactive.

The investigation of the exact circumstances under which these properties manifest themselves demands our serious and immediate attention. We stand on the threshold of a wide and fertile field of research, and cannot hope to make any material progress in the practical cultivation of soils and the economy of manures until this subject has been to some extent investigated in a truly scientific manner, independently of all direct application. Useful applications will as assuredly follow from the establishment and clear recognition of scientific principles, as good works from the principle of Christian love deeply engraven in the heart of man.

It must, therefore, ever be the primary object of every student of nature to increase our knowledge of scientific facts, and thus to furnish the materials from which principles can be deduced, and upon which rational theories can be built. Perhaps no theory in physical science is absolutely true; nevertheless if it fulfil the chief purpose of every good theory, that is, the arrangement of existing scientific facts in a comprehensive form, and their preservation as a common inheritance to mankind, and so leads to an extension of our knowledge of material things, no theory, however erroneous subsequent researches may prove it to be, can be called vain.

No one who has carefully examined the curious and mysterious properties of soils in relation to manuring matters will hastily propound a new theory on the nutrition of

plants whilst our range of observation is as limited, and our chemical facts as imperfectly ascertained, as is now the case. Such presumption would, in the end, only bring discredit upon the author.

The description of chemical facts and the proofs upon which they rest is necessarily a hard and dry subject to the uninitiated. It is nevertheless of great consequence to preserve in a Journal like that of our great national Agricultural Society faithful accounts of original researches in agricultural chemistry, however uninteresting and abstruse they may appear to the practical man.

The present communication deals chiefly with chemical facts, having a more remote but nevertheless important bearing upon practical agriculture. I wish it to be regarded as the first installment of a series of similar researches, which will probably occupy me for the rest of my life, however long I may be permitted to retain my energies and zeal for the promotion of agricultural progress.

FIRST SERIES OF EXPERIMENTS ON THE ABSORPTION OF CAUSTIC AMMONIA.

The object I had in view in instituting this first series of experiments was simply to ascertain the quantity of ammonia which a given quantity of different soils of known composition removed from a weak solution of caustic ammonia prepared with distilled water, and to compare the results with those obtained by other observers from similar experiments on other soils.

The ammonia solution used in the subsequent experiments was of the same strength as that before used, and contained 23.24 grains of ammonia ($N U_3$) in the gallon, or .332 grains of ammonia in 1000 grains of liquid.

The soils employed in these and all following experiments were:—

1. A calcareous clay.
2. A fertile loam, containing a little lime, mixed in equal proportion with the clay subsoil on which it rests.

3. The surface and subsoil of a heavy clay field, containing scracely any sand.
4. A sterile sandy soil, containing much organic matter, and scarcely any lime.
5. Pasture land, being a vegetable mould containing abundance of organic matter and a fair proportion of sand and clay.

These soils were prefered to others for experimental purposes on account of their widely differing physical and chemical properties. They afford good examples of some of the more frequent and important varieties of British soils.

First Experiment, on Calcareous Clay.

The soil used in the first experiment contained, in 100 parts:—

Moisture,	1.51
Organic matter and water of combination,	11.08
Oxides of iron and alumina,	14.25
Carbonate of lime,	10.82
Sulphate of lime,	.71
Magnesia,	.51
Potash (in acid solution),	.82
Soda (in acid solution),	.05
Phosphoric acid,	.10
Insoluble silicates and sand (chiefly clay),	60.65
	100.00

Submitted to a mechanical analysis it yielded:—

Moisture,	1.51
Organic matter and water of combination,	11.08
Carbonate of lime,	10.82
Clay,	52.06
Sand,	24.53
	100.00

3000 grains of this soil were shaken up in a glass-stop-

pered bottle with 14,000 grains of ammonia solution, containing 23.24 grains of caustic ammonia in the imperial gallon. In the course of the day the bottle was repeatedly shaken, and the liquid then left to subside. After standing for three days the soil had all settled to the bottom, and the greater part of the liquid could be drawn off in a perfectly clear condition. This liquid was slightly tinged with yellow.

2000 grains of this clear liquid were then carefully neutralized with a standard solution of sulphuric acid of known strength. It being known how much of the test acid was required to neutralize the ammonia solution before contact with soil, the amount of ammonia retained in the soil could be readily calculated :—

	Ammonia. Grains.
Before contact with the soil the solution contained in 1000 grains,	.332
After contact,	.135
Difference,	.197

197 grains of ammonia were thus removed from each 1000 grains of solution, consequently 2.758 grains of ammonia were removed from 14,000 grains of solution and retained in 3000 grains of soil.

In this experiment accordingly 1000 grains of soil absorbed .9193 grains of ammonia. A repetition of the same experiment gave precisely the same results. The clear liquid poured off the soil being slightly yellow, it occurred to me that the organic matter (humus acids) in the soil possibly might have neutralized a small portion of the free ammonia of the ammoniacal liquid employed in the experiment. As the test-acid cannot indicate any ammonia when previously neutralized by the organic acids of the soil, the proportion of ammonia retained by the latter may be stated rather too high. In order to verify this supposi-

tion, I distilled some of the yellow-colored liquid with caustic potash, in an apparatus which was so constructed that all chance of traces of potash being carried over with the distillate was entirely avoided. The distillate was collected in a measured quantity of acid of known strength, and the amount of ammonia distilled over, carefully determined.

Proceeding in this manner, 1000 grains of liquid, after contact with soil, contained .143 of ammonia. Before contact with soil it contained .332 grains. Consequently 189 were removed from every 1000 grains of liquid, or 2.646 were removed from the whole quantity of liquid employed in the experiment, and retained by 3000 grains of soil, or 1000 grains of soil absorbed .882 grains of ammonia. Not taking into account the amount of free ammonia neutralized by the organic acids of the soil, 1000 grains of the latter, as we have seen, absorbed .9193 grains of ammonia. The difference between .9193 grains and .882 grains is .0373 grains, and represents the quantity of ammonia neutralized by the organic matters contained in 1000 grains of the soil. This difference is very small, but it nevertheless confirms my supposition, and at the same time affords a good proof of the delicacy of the method employed in these experiments.

Second Experiment, on Fertile Loamy Soil.

Equal parts of surface and subsoil were mixed together. The surface soil is a friable, sandy loam; the subsoil is stiffer, containing less sand and more clay.

The mechanical analysis of this soil and its subsoil gave:

	Surface-soil.	Subsoil.
Sand,	76.16	55.15
Clay,	18.09	41.76
Lime, magnesia, &c.,	1.37	.47
Organic matter,	4.38	2.59
	100.00	100.00

Submitted to detailed chemical analysis, the soil and subsoil were found to contain in 100 parts :—

	Surface-soil.	Subsoil.
Organic matter and water of combination,.	4.38	2.59
Alumina,.....	2.15	5.39
Oxide of iron,.....	3.15	7.16
Lime,.....	.77	.26
Magnesia,.....	.13	1.22
Potash,.....	.49	.88
Soda,.....	.13	.28
Phosphoric acid,.....	.12	.19
Chlorine,.....	trace.	trace.
Sulphuric acid,.....	.06	.02
Carbonic acid,.....	.31	1.79
Insoluble silicate and sand,..... 88.31	80.24	
Consisting of:—		
Silicic acid,.....	85.11	62.61
Alumina,.....	2.36	14.55
Lime,.....	....	.85
Magnesia, ...	.50	.23
Potash,.....	.25	1.77
Soda,.....	.09	.21
	100.00	100.00
Containing nitrogen,.....	.182	.09
Equal to ammonia,.....	.220	.11

3500 grains of this soil and subsoil were mixed with 14,000 grains of the above ammonia solution, and, after repeated shakings in a well-stoppered bottle, allowed to settle for three days, by which time the liquid became perfectly clear. The greater portion of the clear solution was then drawn off, and the ammonia contained in it determened in precisely the same manner as in the preceding experiment.

	Ammonia. Grains.
Before contact with soil the solution contained in 1000 grains,	.332
After contact,	.115
Difference,	.217

Thus we see that 217 grains were removed from each 1000 grains of liquid, or 3.038 grains from the whole liquid, and retained by 3500 grains of soil. 1000 grains of soil therefore absorbed .868 of ammonia. By distillation the amount of ammonia in the liquid after contact with soil was found to be .131 grains, in 1000 grains of liquid, or 2.814 grains from the whole liquid. Accordingly 1000 grains of soil absorbed .804 grains of ammonia.

Third Experiment, on Stiff Clay Land.

The mechanical and chemical analysis of the soil and its subsoil furnished the following results :—

Mechanical Analysis.

	Subsoil.	Surface soil.
Moisture,	9.46	3.91
Organic matter and water of combination,	4.87	4.80
Sand,	9.26	10.97
Lime,	1.12	2.19
Clay,	75.29	78.13
	100.00	100.00

Chemical Analysis.

	Subsoil.	Surface soil.
Moisture,	9.46	3.91
Organic matter and water of combination,	4.87	4.80
Oxides of iron and alumina,	17.38	7.85
Phosphoric acid,	.06	.04
Carbonate of lime,	1.02	2.08
Sulphate of lime,	.18	.15
Magnesia,	.92	.32
Alkalies and loss,	.45	
Insoluble siliceous matter (chiefly clay),	65.71	80.85
	100.00	100.00

Equal parts of soil and subsoil were mixed together, and 3500 grains of the mixture shaken up with 11,000 grains of ammonia solution, and treated as before mentioned :—

	Ammonia. Grains.
Before contact with soil the solution contained in 1000 grains,	.332
After contact,	.143
	.189

Consequently .189 grains of ammonia were removed from every 1000 grains of solution, or 2.646 grains from the whole solution; 1000 grains of soil therefore absorbed .7543 grains of ammonia.

Fourth Experiment, on Sterile Sandy Land.

1000 parts of the soil, dried at 212° Fahr., contains :—

Oxide of iron and a little water of combination,	5.36
Oxides of iron and alumina,	5.70
Carbonate of lime,	.25
Alkalies and magnesia,	.49
Phosphoric acid,	trace.
Sulphuric acid,	.08
Soluble silica,	1.01
Insoluble siliceous matter (sand),	87.11
	100.00

It will be seen that this soil hardly contains any lime, and abounds in sand. It contains a good deal of organic matter, but very little clay, which will be seen by the subjoined mechanical analysis :—

Organic matter,	5.86
Clay,	4.57
Lime,	.25
Sand,	89.82
	100.00

3500 grains of this soil were mixed with 14,000 grains of amonia solution and left to settle for three days, when the following results were obtained :—

Before contact with soil 1000 grains of ammonia solution contained	.332
After contact with soil 1000 grains contained.....	.063
	.269

Consequently .269 grains were removed from every 1000 grains of solution, or 3.766 grains from the whole solution.

1000 grains of soil therefore absorb 1.076 grains of ammonia.

In a second experiment, in which the ammonia was determined by a standard solution of test-acid, in the same manner as the first experiment, 1000 grains of soil were found to have absorbed 1.136 grains of ammonia.

In both experiments the solution, after remaining in contact with the sandy soil, had a deep yellow color. The caustic ammonia evidently dissolved a good deal of the organic matter of the soil. The ulmic and humic acids in the soil, in uniting with ammonia, form salts, which are soluble in water, and of a brown color. A brown colored solution thus indicates that some of the ammonia has become neutralized by the organic matters in the soil.

The deeper colored the ammonia solution after contact with soil, the greater will be the error which will be made if the amount of ammonia is determined in the brown-colored liquid in a direct manner by the alkalimetrical process. Whenever the solution is distinctly colored yellow or brown, it should be first distilled with caustic potash, in a properly constructed apparatus, and the free ammonia be determined in the distillate.

Thus the same ammonia solution which yielded to 1000 grains of this sandy soil, according to the direct process of neutralization, 1.076 grains of ammonia in one experiment, and 1.136 grains of ammonia in a scond experiment, after

distillation with caustic potash was found to contain in 1000 grains of liquid .119 grains of ammonia; consequently, subtracting as before .119 from .332 grains, .213 grains are removed from every 1000 grains of liquid, or 2.983 grains from the whole solution.

	Ammonia. Grains.
In a second distillation:	
1000 grains of liquid were found to contain.....	.111
Before contact with soil the solution contained....	.332
	.221

Therefore .221 grains of ammonia were removed from every 1000 grains of liquid, or 3.094 grains from the whole quantity.

	Ammonia. Grains.
According to the first distillation:—	
1000 grains of soil absorbed.....	.852
According to the second distillation:—	
1000 grains of soil absorbed.....	.884
The mean of the two direct determinations is....	1.101
The mean of the two determinations by distillation is	.868
Difference,.....	.233

An error, amounting to one quarter of the whole of the ammonia absorbed by the soil, would therefore have been committed had the determination not been made after distilling the liquid with caustic potash.

Fifth Experiment, on Pasture Land.

The mechanical analysis of this soil yielded the following results:—

Moisture,.....	2.42
Organic matter,.....	11.70
Lime,.....	1.54
Clay,.....	48.39
Sand,.....	35.95
	100.00

Submitted to chemical analysis it yielded :—

Moisture,	2.420
Organic matter,	11.700
Oxides of iron and alumina,	11.860
Carbonate of lime,	1.240
Sulphate of lime,	.306
Phosphoric acid,	.080
Chloride of sodium,	.112
Potash (soluble in acid),	.910
Soluble silica,	4.090
Insoluble siliceous matters,	67.530
	100.248

3500 grains of this soil were shaken up in a stoppered bottle with 14,000 grains of ammonia solution, and the operation conducted in every respect in the same manner as in the preceding experiments :—

	Ammonia. Grains.
Before contact with soil 1000 grains of solution contained	.332
After contact with soil 1000 grains contained	.071
	.261

Thus, .261 grains apparently were removed from every 1000 grains of liquid, or 3.654 grains from the whole solution. Accordingly 1000 grains of soil would have absorbed 1.044 grains of ammonia. But in reality the amount of ammonia absorbed by this soil is not so large.

A glance at the foregoing composition of the soil shows that it is rich in vegetable matter. This fully accounts for the deep brown color which the ammonia solution assumed after contact with the pasture land. It became thus necessary to distil the liquid before determining the ammonia. The following result was obtained by distillation :—

Before contact with soil 1000 grains of liquid contained	.332
After contact with soil 1000 grains of liquid contained	.188
	.144

Therefore .144 grains of ammonia were removed from every 1000 grains, or 2.016 from the whole solution, and taken up by the soil. 1000 grains of soil accordingly absorbed only .576 grains of ammonia.

In the preceding experiments the following quantities of ammonia were thus absorbed by 1000 grains of—

	Ammonia. Grains.
1. Calcareous soil,	.882
2. Fertile loamy soil and clay subsoil,	.804
3. Heavy clay soil,	.754
4. Sterile sandy soil,	.868
5. Pasture land,	.576

It is worthy of notice that the sterile sandy soil absorbed as much ammonia as the calcareous clay, and even rather more than the heavy clay soil, thus proving that the property of absorbing ammonia is not confined to clay soils, but that it is shared by light sandy soils.

It has been too generally assumed that sandy soils do not possess the power of retaining any ammonia; but the preceding experiments show unmistakably that this opinion is not founded on fact. If soluble manuring matters were indeed very readily washed out of sandy soils, it is certain top-dressing with nitrate of soda, or sulphate of ammonia and other soluble manures, in nine cases out of ten, would produce little or no effect upon them; for these top dressings are usually applied at a period of the year when rain falls in abundance, and every facility is afforded for the removal of these soluble matters. Experience, however, teaches us that such top-dressings are particu-

larly valuable on sandy soils, which could not be the case if these did not possess a power ascribed by many persons solely to clay soils. Although it is no doubt the case that heavy rains wash into the drains useful manuring matters, and that clay soils possess in a higher degree the power of retaining fertililizing substances than sandy soils, nevertheless we need not, on the approach of a heavy thunderstorm, be apprehensive that all the sulphate of ammonia or guano which may have been applied to some light sandy land only a few days ago, will be entirely washed away.

Again it may be noticed that the soil taken from the pasture, which abounds in vegetable matter, absorbed the least ammonia. The question naturally arises, is the cause of this difference due to the presence of organic matter, or to any other peculiarity in this soil? I am unable to answer this question at present, but think it possible that the presence of a large quantity of organic acids in a soil may be unfavorable to the retention of ammonia. Future and extended experiments are needed to confirm or refute this supposition. In the mean time I may direct attention to the well-known fact, that on certain old pasture land ammoniacal manures produce little effect, whereas these manures generally increase the produce of gass in a remarkable manner. In all specimens of soil taken from old pastures, upon which ammoniacal manures have little or no effect, I find a large excess of organic matter. It is just possible that this excess of organic matter prevents the retention of ammonia by the soil; but I have no opinion at present as to the precise mode in which this is effected.

I would also notice specially that the soil employed in the third experiment was the same heavy clay soil which Mr. Mechi kindly sent to me for experimental purposes, and with respect to which I have published some filtration experiments in Part I., Vol. xx. of this Journal. For the

latter experiments I used liquid manure, which, in addition to a great number of chemical fertilizing matters, contained only 3.36 grains of ammonia in the imperial gallon. It might certainly have been expected that 20,000 grains of soil would have absorbed this small quantity of ammonia, the absorption even then being only at the rate of .168 grains of ammonia to 1000 grains of soil. Notwithstanding the large quantity of clay in Mr. Mechi's soil, and the small quantity of ammonia in his liquid manure, only 1.81 grains of ammonia were absorbed by 20,000 grains of soil, and 1.55 grains remained in the liquid after three days' contact with it. In this experiment 1000 grains of soil thus absorbed only .0905 of a grain of ammonia.

In my remarks on this experiment, I express the opinion that a stronger solution of ammonia passed through Mr. Mechi's soil would have parted with a much larger proportion of ammonia than in this experiment. The proof of this is now given. In the former experiment 1000 grains of this clay soil removed only .0905 of a grain of ammonia from a very dilute ammoniacal liquid; in the present experiment the same quantity of the same soil absorbed about eight times as much, or .754 grains of ammonia from the stronger solution, containing 23.24 grains of ammonia per gallon.

It must, however, be remembered, that whereas I employed in my former experiments highly complex liquids, in my present trials simple solutions of caustic ammonia were used. The quantity of ammonia which a soil is capable of absorbing must no doubt depend in some degree on the conditions under which the ammonia is present in the liquid. The preceding experiment is, therefore, not quite conclusive. In order to satisfy myself beyond doubt whether more ammonia is really removed from a stronger than a weaker solution or not, I instituted a second series of experiments, which I must briefly describe.

SECOND SERIES OF ABSORPTION EXPERIMENTS WITH STRONGER AMMONIA SOLUTIONS.

A solution of ammonia in distilled water was prepared, containing about twice as much ammonia as that used in the first series. To speak more exactly, this stronger solution contained 47.11 grains of ammonia per gallon, or .673 grains of ammonia in 1000 grains of liquid.

The clear ammoniacal solution having been poured off the soil as completely as was possible in each of the five experiments of the first series, the liquid remaining with the soils in the bottles was weighed, and the amount of ammonia contained in this liquid ascertained in each case by calculation :—

14,000 grains of the stronger solution, containing .673 grains of ammonia in 1000 of liquid, were now added, and the bottle well agitated several times during the first day, the liquid being afterwards allowed to subside. After three days it became clear. A quantity sufficient for making three or four ammonia determinations was then drawn off in a perfectly clear state.

The amount of ammonia contained in the remainder of the solutions left in the soils from the first series of experiments being known, and likewise the quantity of ammonia added in the stronger solution, the ammonia in the liquid after contact with the soil determined the proportion absorbed from the stronger ammoniacal liquid.

The same plan was adopted in all five experiments, and in each experiment the same quantity of ammonia solution was used.

First Experiment (Calcareous Soil).

	Ammonia. Grains.
Quantity of ammonia left in bottle,.....	.732
" " in 1400 grains of fresh liquid,	9.422
	10.154

1000 grains of mixed liquid contained .531 grains of ammonia.

	Ammonia. Grains.
After contact with soil the solution contained in 1000 grains,.....	.431
Before contact with soil it contained,.....	.531
	.100

Consequently .100 grains were removed from each 1000 grains of liquid, or 1.9120 grains from the entire solution employed in the experiment, and taken up by 3000 grains of soil.

1000 grains of soil thus absorbed .6373 grans of ammonia, in addition to .882 grains of ammonia absorbed in the 1st Experiment with a weaker solution.

The total quantity of ammonia taken up by 1000 grains of the soil in the two experiments thus amounts to 1.5193 grains.

Second Experiment (*Fertile Loamy Soil*).

	Ammonia. Grains.
Quantity of ammonia left in bottle,.....	.437
" " added in fresh solution,.....	9.422
	9.859

1000 grains of mixed solution contained .554 grains of ammonia.

After contact with the soil the solution contained in 1000 grains .410 grains, therefore .144 grains were removed from every 1000 grains of liquid, or 2.5632 grains from the entire solution used in the experiment, and absorbed by 3500 grains of soil; or 1000 grains of soil absorbed .7323 grains of ammonia, in addition to .804 grains of ammonia absorbed in the 1st Experiment, thus giving a total of 1.5363 grains of ammonia in both trials.

Third Experiment (Heavy Clay Soil).

	Ammonia. Grains.
Quantity of ammonia left in bottle,.....	.848
" " added in fresh solution,.....	9.442
	10.288
1000 grains of mixed solution contained.....	.515
After contact with soil 1000 grains of solution contained	.450
	.065

Therefore .065 grains were removed from every 1000 grains of liquid, or 1.294 grains from the entire solution, and absorbed by 3500 grains of soil.

	Ammonia. Grains.
1000 grains thus absorbed in the 2nd Experiment,.	.3697
And in the 1st Experiment,.....	.7543
Or in both Experiments,.....	1.1240

Fourth Experiment (Sterile Sandy Soil).

	Ammonia. Grains.
Quantity of ammonia left in bottle,.....	.414
" " added in fresh solution,.....	9.442
	9.856
For 1000 grains of mixed solution there was.....	.562
And after contact with soil,.....	.431
	.131

Thus .131 grains were removed from every 1000 grains of solution, or 2.290 grains from the entire solution, and taken up by 3500 grains of soil.

	Ammonia. Grains.
1000 grains of soil, therefore, absorbed in 2d Experiment, ...	.654
And in 1st Experiment, ...	.868
Or in both Experiments,.....	1.522

Fifth Experiment (Pasture Land).

	Ammonia. Grains.
Quantity of ammonia left in bottle,.....	.926
" " added in fresh solution,.....	9.422
	10.348
1000 grains of mixed solution contained.....	.546
And after contact with the soil,.....	.370
	.176

Therefore .176 grains were removed from every 1000 grains of liquid of 3.331 grains from the entire quantity of liquid used in the experiment and absorbed by 3500 grains of soil.

	Ammonia. Grains.
1000 grains of this soil thus absorbed in the 2nd Experiment,.....	.9457
After having taken up in the 1st Experiment,.....	.576
Or in both experiments 1000 grains of soil absorbed	1.5217

Thus in each case the soils absorbed a considerable quantity of ammonia from the stronger solution with which they were brought into contact after having taken up a certain variable quantity from a weaker solution.

It is singular that whilst the proportion of ammonia removed by each of these five soils varied considerably in the first series of experiments with the weaker ammonia solution, the total quantity of ammonia absorbed by 1000 grains of soil in both experiments is almost identical in four of the soils, and but little less in the remaining one. Thus the total amount of ammonia absorbed by 1000 grains of soil was in the case of the—

	Ammonia. Grains.
1. Calcareous soil,.....	1.5193
2. Fertile loamy soil,.....	1.5363
3. Clay soil,.....	1.1240
4. Sterile sandy soil,.....	1.5229
5. Pasture land, ...	1.5217

It will be seen that the soil from a permanent pasture absorbed much more ammonia in the 2nd Experiment than in the first, so that the total quantity of ammonia absorbed in the two together is nearly identical with that absorbed by the other soils.

I have shown that this soil contained much organic matter (humic acids), and that a portion of this organic matter united with ammonia passed into solution in the 1st Experiment, imparting to it a deep yellow color. In the 2nd Experiment with a stronger ammonia solution the liquid was but little colored. It appears thus that, comparatively speaking, little ammonia was fixed in the soil in the 1st Experiment, because the organic acids in this soil uniting with the ammonia of the weaker solution, produced soluble combination before insoluble compounds of ammonia could be formed in the soil in as large a proportion as in the other soils containing much less organic matter.

The organic acids of the pasture soil were apparently removed in the 1st Experiment, and thereby the soil acquired increased powers of absorbing ammonia from the stronger solution used in the 2nd Experiment.

THIRD SERIES OF EXPERIMENTS.

Although the preceding experiments show distinctly that soils, no matter of what character, absorb more ammonia from strong than weak solutions, and that however weak the solution may be, the total amount of ammonia which it may contain is never wholly absorbed by the soil, it appeared to me desirable to place these facts beyond a doubt by further experiments. I therefore instituted a fresh series, in which one and the same soil was used throughout. This soil was found, on analysis, to contain in 100 parts :—

	Ammonia. Grains.
Moisture,	4.72
Organic matter and water of combination,	11.03
Oxides of iron,	9.98
Alumina,	6.06
Carbonate of lime,	12.10
Sulphate of lime,	.75
Alkalies and magnesia (determined by loss),	1.43
Soluble silica (soluble in dilute caustic potash),	17.93
Insoluble siliceous matter (chiefly clay),	36.00
	100.00

An inspection of the analysis shows that this soil contains a good deal of clay and of carbonate of lime. It is in fact a calcareous clay, of a moderately stiff and retentive physical character.

Four solutions of caustic ammonia in distilled water were carefully prepared:—

	Grains of Ammonia per Gallon.		Per 1000 Grains.
Solution No. 1 contained	44.38	or	.634
" No. 2 "	21.28	or	.304
" No. 3 "	12.32	or	.176
" No. 4 "	6.16	or	.088

In each experiment 7000 grains of the respective liquids were repeatedly agitated in a tight-fitting glass-stoppered bottle, with ½ lb. of soil. The liquid was then allowed to subside for four days, after which time it became perfectly clear. The ammonia in the clear liquids was then determined by the process described in the preceding pages, and the following results were obtained:—

1.—*Experiment with Solution No.* 1.

	Ammonia. Grains.
Before contact with soil the solution contained	4.438
After contact " " "	2.128
	2.310

Therefore 2.310 grains of ammonia were absorbed by 1750 grains of soil, or 1000 grains absorbed 1.32 grains of ammonia.

2.—*Experiment with Solution No. 2.*

	Ammonia. Grains.
Before contact with soil the solution contained....	2.128
After contact " " "	1.008
	1.120

Therefore 1.120 grains of ammonia were absorbed by 1750 grains of soil, or 1000 grains absorbed .64 grains of ammonia.

3.—*Experiment with Solution No. 3.*

	Ammonia. Grains.
Before contact with soil the solution contained....	1.232
After contact " " "	.777
	.455

Thus .455 grains of ammonia were absorbed by 1750 grains of soil, or 1000 grains absorbed .26 grains of ammonia.

4.—*Experiment with Solution No. 4.*

Before contact with soil the solution contained,....	.616
After contact " " "	.441
	.175

Therefore .175 grains of ammonia were absorbed by 1750 grains of soil, or 1000 grains of soil absorbed .100 grains of ammonia.

According to the strength of the different solutions 1000 grains of soil thus absorbed in—

	Ammonia. Grains.
No. 1, ...	1.32
No. 2, ...	.64
No. 3, ...	.26
No. 4, ...	.10

Not only is the absolute quantity of ammonia which this soil absorbs from an ammoniacal solution larger as the solution employed is stronger; but very dilute solutions are relatively less exhausted by it than stronger ones.

Thus, whilst in the two first experiments, in round numbers, one half of the ammonia contained in the solutions was absorbed, in the 3rd Experiment about one-third, and in the 4th only about one-fourth of the ammonia was retained by the soil.

In the next place I made some additional experiments for the purpose of ascertaining whether this soil, after having taken up as much ammonia as it will from a weaker solution, would take up more from a stronger one.

Experiment 5.

The solution left in the bottle from Experiment No. 2 was drawn off as much as possible, the liquid remaining with the soil was ascertained by weighing, the amount of ammonia in it calculated, and 7000 grains of solution No. 1, containing 4.438 grains of ammonia added.

The quantity of liquid left in the bottle was 2070 grains, and contained .298 grains of ammonia, the fresh quantity of stronger solution added 7000 grains, containing 4.438 grains.

The total solution weighed 9070 grains, and contained 4.736 grains of ammonia; 1000 grains of this solution, therefore, contained .522 grains of ammonia. After standing for four days, the liquid was drawn off and the strength determined as before. This solution contained .320 grains of ammonia.

	Ammonia. Grains.
Before contact with soil 1000 grains of solution contained	.522
After contact with soil 1000 grains of solution contained	.320
	.202

Thus .202 grains of ammonia were removed from every 1000 grains of solution. From the whole solution (weighing 9070 grains) consequently 1.83214 were removed and retained by the soil (1750 grains), which had already taken up 1.120 grains from the weaker solution.

	Ammonia Grains.
1000 grains of soil therefore absorbed in the 2nd Experiment,	1.047
And had previously absorbed,	.640
	1.687

Or 1000 grains of soil absorbed from both solutions 1.687 grains of ammonia.

In a similar manner the following experiments were made:—

Experiment 6.

There was added to the contents of the bottle used in Experiment No. 3, 5000 grains of solution No. 2, containing .304 grains ammonia in 1000 of liquid.

	Ammonia. Grains.
Before contact with soil 1000 grains of mixed solutions contained	.287
After contact with soil 1000 grains of the solution contained	.127
	.110

Therefore .110 grains were removed from every 1000 grains of liquid, or .336 grains from entire solution, and retained by 1750 grains of soil, which had already taken up .455 grains from the weaker solution. 1000 grains of soil therefore absorbed in 2nd Experiment .477 grains, in addition to .260 grains absorbed from the weaker solution, or from both solutions .737 grains of ammonia were removed and retained by 1000 grains of soil.

Experiment 7.

The solution left in the bottle from Experiment No. 4

was drawn off as thoroughly as possible; 7000 grains of solution No. 3, containing .176 grains of ammonia in 1000 of liquid, were then added, and after repeated shakings the whole was left to settle for four days.

	Ammonia. Grains.
Before contact with soil 1000 grains of the mixed solutions contained.....	.147
After contact with soil 1000 grains of the solution contained	.096
	.051

Therefore .051 grains of ammonia were removed from every 1000 grains of liquid, or .480 grains from the whole solution, and retained by 1750 grains of soil, which had already taken up .175 grains of ammonia from the weaker solution.

	Ammonia. Grains.
1000 grains of soil thus absorbed from the weakest solution, ...	.100
From the stronger solution,.....	.274
	.374

Or in both experiments .374 grains were removed and retained by 1000 grains of soil.

Thus in all cases much more ammonia was removed from the stronger solutions than from the weaker, and was retained by the soil in addition to the quantity previously absorbed from the weaker solution. Thus the total amount of ammonia absorbed by 1000 grains of soil was in—

	Ammonia. Grains.
Experiment No. 5, ...	1.687
" No. 6, ...	.737
" No. 7, ...	.374

It will be observed that in Experiment No. 1, 1000 grains of soil removed 1.32 grains of ammonia from the stronger solution. The same solution, taken in the same quantity as in Experiment No. 1, and left in contact with soil which had already absorbed .64 grains of ammonia, removed an additional quantity of 1.047 grains, or altogether 1.687 grains.

It thus appears not only that the strength of the solution influences the amount of ammonia which can be retained by the soil, but likewise that the quantity of liquid which is passed through a soil will affect the proportion which a soil is capable of abstracting from a given solution.

From a *large quantity* of an ammoniacal liquid it appears to me likely that a definite quantity of soil will remove more ammonia than from a smaller amount of liquid of the same strength.

I have not, as yet, made many experiments in this direction. These are urgently needed, for it is clear that we cannot calculate with any degree of certainty the amount of loss in ammonia to which ammoniacal manures are subject in contact with soil, as long as we are not fully acquainted with the exact conditions under which this most interesting chemical property of soils manifests itself.

FIFTH SERIES.—AMMONIA RETENTION EXPERIMENTS.

In the preceding experiments it has been shown that all the soils experimented upon possess the power of absorbing ammonia; further, that all the soils absorbed more ammonia from a more concentrated than from a weaker solution; and, lastly, that in no instance was the ammonia entirely removed from a solution brought into intimate contact with soil. Even in the case of heavy clay soils, and when very dilute ammoniacal solutions were employed, ammonia invariably remained in solution. These facts not only explain the different results which must be obtained

in experimenting upon the same kind of soil with solutions of different strength, but they also prove incontestably that the compounds which, no doubt, are produced in almost every description of soil, when ammoniacal solutions are brought into contact with them, are not entirely insoluble, as has been supposed, but sufficiently soluble in water to benefit the growing crops, which we have no reason to suppose take up food from the soil in any other than a soluble state.

Notwithstanding the power of soils to absorb ammonia, this fertilizing constituent is not fixed by the soil so completely or permanently as to be of no avail to the growing plant. The possibility also exists that long-continued and heavy rains may wash out more or less completely the ammonia previously absorbed by soils. Hence the invariable presence of ammonia in spring waters.

An important question is naturally started by these curious properties of soils. It is this: Is the power of soils to retain ammonia greater, and if so to what extent, than the tendency to yield it again to water passed through the soil?

In order to facilitate the solution of this question I instituted a Fifth Series of Experiments, which, under the title of "Ammonia Retention Experiments," I shall now endeavor briefly to describe.

The soil used in these experiments was the same as that employed in the Fourth Series.

1*st Experiment.*—A strong solution of pure ammonia in distilled water was prepared, and its strength accurately determined. An imperial gallon contained 194.39 grains of ammonia, or 1000 grains 2.777 grains. ¼ lb. soil (1750 grains) was placed in a well-stoppered bottle, and 7000 grains of the ammonia solution of the above strength were added. The bottle and contents were repeatedly shaken, and then the whole left to subside for three days. The

clear liquid was drawn off and weighed, and its strength determined in the usual way.

	Ammonia. Grains.
Before contact with the soil 1000 grains of the solution contained	2.777
After contact,	2.112
	.665

Thus .665 grains of ammonia were removed from every 1000 grains of solution, or 4.655 grains were removed from the whole solution employed (7000 grains) and retained by 1750 grains of soil. 1000 grains of soil consequently absorbed 2.66 grains of ammonia. The quantity of liquid drawn off weighed 4916 grains, and contained 10.382 grains of ammonia.

The residue in the bottle was next shaken up with 7000 grains of distilled water; after three days the clear liquid was drawn off, weighed, and its strength determined as before. 1000 grains of the liquid were found to contain .510 grains of ammonia. The amount of liquid left in the bottle before the addition of 7000 grains of water, and its strength, being known, this result will show whether or not the addition of water has had any effect upon the ammonia retained by the soil from a strong ammoniacal solution.

Had the effect of the water simply resulted in the dilution of the ammonia-solution, which could not be poured off from the soil in a clear state, its strength would have been .484 grains of ammonia in every 1000 grains; but it was .510 grains of ammonia, consequently .026 grains of ammonia were removed by every 1000 grains of liquid, or .236 grains by the whole quantity of liquid employed in the experiment, from 4.655 grains of ammonia previously absorbed by ½ lb. of soil.

2nd Experiment.—7000 grains of distilled water were added to the residue in the bottle from the preceding ex-

periment, and after three days the clear liquid was drawn off, weighed, and the strength determined. 1000 grains of liquid contained .192 grains. If this second addition of water had not acted upon the ammonia absorbed by the soil in the preceding experiment, 1000 grains of liquid would have contained .121 of ammonia; consequently .071 of ammonia were extracted by every 1000 grains of liquid, or .642 grains by the whole liquid, from the ammonia which the soil retained after having been once washed with 7000 grains of water.

3rd Experiment.—7000 grains of distilled water were added to the residue left in the bottle from the 2d Experiment, and treated as before. 1000 grains of clear liquid contained .111 grains of ammonia. If no ammonia had been extracted by this third addition of water, 1000 grains of liquid would have contained .044 of ammonia, instead of .111 grains; consequently .067 grains of ammonia were extracted by every 1000 grains, or .61 grains by the whole liquid from the soil, after having been washed twice before with water.

4th Experiment.—To the residue left in bottle from 3rd Experiment 7000 grains of distilled water were again added, and the bottle put aside for two months. After that time the clear liquid was drawn off, weighed, and its strength determined. 1000 grains of liquid contained .096 grains of ammonia. Had no ammonia been extracted from the soil it would have contained .037 grains of ammonia in 1000 grains; accordingly .059 of ammonia were extracted by every 1000 grains of liquid, or .622 grains by the entire liquid. This quantity, it will be observed, is almost identical with that extracted in the 3rd Experiment.

5th Experiment.—After a fresh addition of 7000 grains of distilled water, 1000 grains of liquid contained .049 grains of ammonia. Had no ammonia been extracted from the soil it would have contained .028 grains; therefore

.012 grains were extracted by every 1000 grains of liquid, or .120 grains by the entire solution.

6th Experiment.—After a fresh addition of 7000 grains of distilled water 1000 grains of liquid contained .029 grains of ammonia. If no ammonia had been extracted 1000 grains of liquid would have contained .006 grains; therefore .023 grains of ammonia were extracted by every 1000 grains, or .193 grains by the entire quantity of liquid.

7th Experiment.—7000 grains of distilled water were, for the seventh time, added to the residue left in the bottle from the 6th Experiment, and treated as before. 1000 grains of liquid contained .031 grains of ammonia. Had no ammonia been extracted they would have contained .005 grains of ammonia; thus .026 grains of ammonia were extracted from the soil by every 1000 grains, or .228 grains from the entire liquid.

Let us then add up the quantities of ammonia removed by these successive washings with water :—

Experiment.				Ammonia. Grains.
1st.	Removed by	7000 grains	of water, ...	.236
2nd.	"	"	"	.642
3rd.	"	"	"	.610
4th.	"	"	"	.622
5th.	"	"	"	.120
6th.	"	"	"	.193
7th.	"	"	"	.228
	Total, ...			2.651

Thus .2651 grains of ammonia were removed by 49,000 grains of water from ½ lb. of soil. This quantity of soil absorbed from a strong ammoniacal solution 4.655 grains of ammonia. By deducting 2.651 grains of ammonia, *i. e.* the amount washed out by seven successive washings, with 7000 grains of water each, we obtain 2.004 as the quanti-

ty of ammonia which was retained by the soil, after all the washings with water.

More than half the ammonia originally absorbed by the soil was thus again removed by washing with water.

It appears thus distinctly that the *power of soils to remove ammonia from solutions is very much greater than their property of yielding it again to water.*

Indeed even a very much larger quantity of water than that which falls annually upon our fields in the shape of rain is incapable of washing out of the soil such a proportion of ammonia, as can be of any account in relation to the quantities incorporated with it in the shape of natural or artificial manures. In the experiments before us the weight of water which was passed through the soil was twenty-eight times as large as the weight of the soil, and yet little more than half the quantity of ammonia absorbed by the latter was extracted by this immense amount of water. In nature such excessive washings by rain are not likely to occur; we need not therefore fear that the ammonia absorbed by the soil we cultivate will be removed by the most heavy rain storms to anything like the extent in which it was removed in my experiments.

At the same time it is well to remember that each shower of rain renders soluble some ammonia which may have been previously absorbed by the soil. The best fertilizing matters, if presented to plants in great abundance, exercise an injurious effect upon their growth, or at any rate, favor an unhealthy development of one part of the vegetable organism at the expense of another. Thus wheat or barley grown on a dung-heap becomes rank and attains a great size, but will hardly flower, and never produce any grain. This is accounted for by the fact that farm-yard manure contains far too much soluble manuring matters to be beneficial to the healthy development of the crops which we cultivate. It is one of the functions of soils to check the accumulation of soluble fertilizing matters, and

this function it performs in many instances by rendering insoluble, or, to speak more correctly, by greatly reducing the solubility of those important fertilizing matters which would otherwise induce an unhealthy or abnormal growth of plants. Considering the structure of the spongioles of the roots of plants we readily comprehend how important it is that such matter should be able to find its way into the vegetable organism. Whilst thus it is the particular function of the soil to prevent the loss of ammonia from manures, such as guano, sulphate of ammonia, &c., which we are in the habit of applying to the land, provision is made that the ammonia, when it becomes fixed by the soil, should not be rendered so entirely insoluble as to be of no direct benefit to plants.

In short, all soils, clay as well as sand, store up ammonia with great eagerness, and part with it reluctantly.

SIXTH SERIES.—ABSORPTION OF AMMONIA FROM A SOLUTION CONTAINING CHLORIDE OF AMMONIUM.

In this series of experiments I endeavored to ascertain the amount of ammonia which soils of known composition absorb from a standard solution of sal-ammoniac in water.

The solution used in the following experiment contained 79.80 grains of chloride of ammonium in the imperial gallon, or 25.20 grains of ammonia; or 1000 grains of this solution contained 1.14 grains of chloride of ammonium, or .36 grains of ammonia.

The soils thus experimented upon were the same as those used in the First Series of Experiments, namely:—

1. A calcareous clay.
2. A fertile loam.
3. Stiff clay soil.
4. Sterile sandy soil.
5. Pasture land.

In each case 25 grains of soil were mixed with 14,000

grains of solution of chloride of ammonium, containing 36 grains of ammonia in 1000 grains of liquid. After standing three days the clear liquid was drawn off, and the ammonia contained in it obtained by distillation with caustic potash. The operation was conducted in each case alike, and the following results were obtained :—

		Ammonia. Grains.
No. 1.	1000 grains of soil absorbed.....	.68
No. 2.	" " "	.76
No. 3.	" " "	.80
No. 4.	" " "	.16
No. 5.	" " "	.64

It will be noticed that the proportions of ammonia which are absorbed by the five different soils from a solution of sal-ammoniac, containing 79.80 grains of this salt in an imperial gallon, vary considerably.

In the case of the sandy soil very little ammonia indeed was absorbed. This is rather singular since the same sandy soil absorbed a good deal of ammonia on being brought into contact with a dilute solution of free ammonia.

We thus see that a soil may absorb free ammonia in considerable quantities, and yet not have the power of separating and fixing ammonia from an ammoniacal salt, such as sal-ammoniac.

SEVENTH SERIES—ABSORPTION OF AMMONIA FROM A SOLUTION OF SULPHATE OF AMMONIA.

A solution of sulphate of ammonia was prepared, containing 77.70 grains of sulphate of ammonia per imperial gallon, or 20.16 grains of ammonia. 1000 grains of liquid therefore contained .288 grains of ammonia. The same soil was used in this as in the preceding Series of Experiments. In each case 3500 grains of soil were shaken up in a well stoppered bottle with 14,000 grains of the solution of the above strength. In these experiments—

		Ammonia. Grains.
No. 1.	1000 grains of soil absorbed.....	.608
No. 2.	" " "	.640
No. 3.	" " "	.576
No. 4.	" " "	.256
No. 5.	" " "	.448

Here again the sandy soil absorbed but very little ammonia. There seems thus to be something or other wanting in this soil which prevents it from exercising a decomposing influence upon ammoniacal salts similar to that manifested by the four other soils. I am informed that farm yard manure, guano and other fertilizers of recognized value, produce little effect upon the crops growing on this sterile sandy soil.

EIGHTH SERIES—RETENTION OF AMMONIA FROM A SOLUTION OF SULPHATE OF AMMONIA.

In the Fifth Series of experiments I have shown that a soil which absorbed a certain quantity of free ammonia from a tolerably strong solution with which it was brought into contact again yielded small quantities of ammonia to repeated washings of distilled water.

It appeared to me desirable to ascertain whether similar results would be obtained on washing a soil which had absorbed a certain quantity of ammonia from a solution of sulphate of ammonia.

To this end, I prepared a solution of sulphate of ammonia, which contained 188.720 grains of ammonia in the gallon, or 2.696 grains of ammonia in 1000 grains of liquid. One-fourth lb. (1750 grains) of calcareous soil used in First Series was mixed in a stoppered bottle with 7000 grains of this solution, then left at rest for three days, after which the clear liquid was drawn off, and the ammonia contained in it determined by distilation :

	Ammonia. Grains.
Before contact with soil 1000 grs. of solution contained,	2.696
After contact with soil 1000 grs. of solution contained,	2.000
	.696

Therefore .696 grains of ammonia were removed from every 1000 grains of liquid, or 4.872 grains were removed from the whole solution, and retained by 1750 grains of soil; 1000 grains of soil thus absorbed 2.784 grains of ammonia.

A comparison of this result with the amount of ammonia absorbed from sulphate of ammonia in the preceding experiments, shows that much more ammonia is removed by soil from the stronger ammoniacal solution than from the weaker one.

The liquid was drawn off as much as possible, and the amount of that which could not be removed ascertained by weight; 7000 grains of pure distilled water were next added; after three days the clear liquid was drawn off and weighed, and the ammonia in it determined by distillation in the usual way.

Proceeding in this manner, the soil which had absorbed 4.872 grains of ammonia from a strong solution of sulphate of ammonia was washed five times with 7000 grains of water each time:

	Ammonia. Grains.
The first washing removed	.278
The second "	.633
The third "	.813
The fourth "	.416
The fifth "	.242
	2.382

35,000 grains of water, or 1 gallon, thus removed 2.382

grains of ammonia from the soil, which had absorbed 4.872 grains of ammonia. At the conclusion of the experiment the quantity of ammonia which remained in one-fourth lb. of soil amounted to 2.490 grains, or very nearly half the quantity which it absorbed in the first place.

These results are conformable with those obtained in the Retention Experiments, where a solution of free ammonia was employed.

NINTH SERIES—RETENTION OF AMMONIA FROM A SOLUTION OF CHLORIDE OF AMMONIA.

The soil used in this series of experiments was the same as that employed in the Third Series.

The solution of sal-ammoniac contained 211.40 grains of ammonia in the gallon, or 3.02 grains in 1000 of liquid. ¼ lb. of soil and 7000 grains of solution of sal-ammoniac of this strength, were mixed together, and the amount of ammonia absorbed by the soil ascertained as before. The whole quantity of soil absorbed in this experiment 5.60 grains of ammonia. 1000 grains thus separated 3.20 grains of ammonia from the solution of sal-ammoniac.

Here again we observe that the amount of ammonia which a soil is capable of removing from solutions of ammoniacal salts depends upon the strength of the liquid with which it is brought into contact.

The soil was next washed four times with 7000 grains of water, and the proportion of ammonia removed in each washing determined as before :—

	Ammonia. Grains.
The first washing removed.....	.409
The second " "	.646
The third " "	.811
The fourth " "	.499
	2.365

28,000 grains of water thus removed 2.365 grains of ammonia from ¼ lb. of soil, which in the first place absorbed

5.60 grains of ammonia from a strong solution of sal-ammoniac. After washing with a considerable quantity of water, the soil thus retained 3.236 grains of ammonia, instead of 5.60 grains.

Thus, whether a soil has absorbed free ammonia, or ammonia from a solution of sulphate of ammonia or sal-ammoniac, water passed through it will wash out a certain quantity of ammonia. But in each case the power of a soil to retain ammonia is very much greater than its inclination to yield it again to water.

It is hardly necessary to remind the reader that in the absorption experiments with salts of ammonia the acid of the salt passes through the soil in combination with lime or other mineral matters of the soil, whilst the ammonia alone is retained. I may notice, however, that the watery liquid which passes through a soil when solutions of ammoniacal salts are filtered through it, contains a larger quantity of *mineral* matters than is the case when *pure* water is filtered through the soil. It would thus appear that ammoniacal salts have the property of rendering the mineral matters of the soil soluble. But the details of experiments on this subject, and an account of their bearing on agriculture, must be reserved for a future communication.

In conclusion, the more prominent and practically interesting points which have been developed in the preceding pages may be briefly stated in the following

SUMMARY.

1. All the soils experimented upon have the power of absorbing ammonia from its solution in water.

2. The sandy soil absorbed as much ammonia as the clay soil.

3. The pasture land, and probably many other soils rich in organic matter, retain less ammonia than soils in which organic matter does not occur in excess.

4. The differences between sandy, calcareous, and clay

soils, in their power of absorbing ammonia, is not so great as is generally believed.

5. Ammonia is never completely removed from its solution, however weak it may be. On passing a solution of ammonia, whether weak or strong, through any kind of soil, a certain quantity of ammonia invariably passes through. No soil has the power of fixing completely the ammonia with which it is brought into contact.

6. In the preceding experiments all the soils absorbed more ammonia from the stronger than from the weaker solution; that is to say, the absolute quantity of ammonia which is absorbed by a soil is larger when a stronger solution of ammonia is passed through it. But, relatively, weaker solutions are more thoroughly exhausted than stronger ones.

7. Soils containing much organic matter (humic acids) at first absorb less ammonia from weak solutions than others poor in vegetable matter. But subsequently they take up more ammonia if it is presented to them in stronger solutions.

8. A soil which has absorbed as much ammonia as it will from a weak solution, takes up a fresh quantity of ammonia when it is brought into contact with a stronger ammoniacal solution.

9. All the soils not only absorbed free ammonia, but likewise removed a certain quantity from solutions of ammoniacal salts.

10. In passing sulphate of ammonia or sal-ammoniac through a soil, the ammonia alone is absorbed, and the acids pass through in combination with lime or other mineral matters.

11. A large proportion of mineralmatter is dissolved in a soil when dilute solutions of ammoniacal salts are filtered through it than is the case with pure water.

12. Soils absorb more ammonia from stronger than weak-

er solutions of sulphate of ammonia and chloride of ammonium.

13. Not only the *strength*, but likewise the *quantity* of the ammoniacal solution which is brought into contact with a soil, appears to influence the amount of ammonia which the latter is capable of retaining.

14. In no instance is the ammonia absorbed by soils from solutions of free ammonia, or from ammoniacal salts, so completely or permanently fixed, as to prevent water from washing out appreciable quantities of the ammonia.

15. The proportion of ammonia, however, which is removed in the several washings, is small in proportion to that retained by the soil.

16. *The power of soils to absorb ammonia from solutions of free ammonia, or from solutions of sulphate of ammonia or chloride of ammonium, is thus greater than the power of water to redissolve it.*

17. In practice no fear need be entertained that in ordinary years heavy showers of rain will remove much ammonia from ammoniacal top-dressings, such as sulphate of ammonia, soot, guano, and similar manures, which are used by farmers for wheat, barley and oats.

18. On the other hand, in very rainy seasons, appreciable quantities of ammonia may be removed from land top-dressed with ammoniacal manures, even in the case of stiff clay soils.

Royal Agricultural College, Cirencester, June, 1860.

THE PROPER OFFICE OF STRAW ON A FARM.

A Prize Essay by Henry Evershed, published in the Journal of the Royal Agricultural Society of England.

Straw is used on most farms, both as food for stock and as a bed for them to lie on; I shall therefore endeavor to assign to each of these uses its proper value. The requirements of the farm-yard necessitate, as I believe, certain modifications in the use of straw; and the system of letting the cattle "eat their liking" from the crib, and tread the rest under foot, though still finding favor in some secluded districts, may be amended.

The present high price and growing demand for meat will make us all look inquiringly at our straw stacks, anxious to know whether all their value departed with the grain, or whether there be not beef and mutton latent in straw as well as in turnips.

It is a common remark on many of the best managed and most profitable farms, "How shall I manage to tread all this straw into good dung?" And on other farms differently situated, "How shall I get straw for all this stock?"

It is, however, a mistake in any case to be too anxious to "tread in" straw. Straw is not dung; it is, as litter, a medium for soaking up the liquids and solids of the farm-yard, making a dry bed for cattle. Taking its market value at 1*l.* per ton, (in some neighborhoods it is twice as much,) fifty tons will buy 50*l.* worth of guano, worth on any farm more than fifty tons of straw merely "trod into dung."*

* The above conclusions are not strictly correct, or at least not applicable in all cases. 1st, although straw be not dung, yet the carbon as well as the minerals which it contains have a positive value as manure, and exert a special influence on light sandy soils. On such soils

The using of straw for the sake of getting rid of it, is a miscalculation, and any covenants which necessitate this by withholding permission to sell it, are surely founded in error.

I shall now turn to a more common state of things, where straw is not in excess of the ordinary requirements of the farm: first examining what appears to be the most important, because the most indispensable, of the uses of straw, viz: as litter. All the larger animals require litter of some sort. A warm, dry, and soft bed is quite indispensable for their comfort. As an expedient for saving straw, I once put twelve three-year-old oxen on boards to fatten, and found it a very cruel experiment. The animals were always in a state of distress; one of them refused to lie down, and remained standing four days, until the muscles of the thigh swelled from the unnatural tension. A comfortable layer of straw soon set all right again, and as the spaces between the boards allowed the moisture to pass into a drain, a great saving of litter was effected.*

A wish to save straw occasionally leads to a sparing use of it in the yards, always resulting, however, in the immediate discomfort of every head of stock. In fact, the best of food, and unremitting attention, will not compensate for the want of a comfortable bed. Frequent supplies of dry litter in sheds and yards are absolutely necessary. Those who are accustomed to a well stocked farm-yard are aware how entirely success depends on attention to details; the omission of any of these mars all. A comfortable bed is one of the most important.

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guano is a very inadequate substitute for farm yard manure. Moreover, in the case before us, 80 tons of straw must be taken to represent a large number of tons of inferior manure. On farms where a good head of stock is commonly fed, it must be quite an exceptionable case if there be any superfluity of straw; because, where the land is strong and the climate moist, so that a great bulk of straw per acre will be grown, there will generally be a considerable admixture of pasture with the arable land: when the land is light and the climate dry, and the farm almost exclusively arable, the yield of straw will not be great and a considerable portion of it will be required as a substitute for hay in feeding the stock. A good farmer does not generally find that he has more straw than he can turn to *good* account, although, under certain circumstances, he may think it better economy to sell a portion, and replace it by purchased manure.—P. H. F.

* The cocoa-nut matting used by Mr. Horsfall in his cow-stalls may be found serviceable by other farmers who, as in his case, are situated in neighborhoods where straw is both dear and scarce. It would not, however, be used to any advantage for steers as for cows.—P. H. F.

It may be asked, "Is it the proper use of straw, to be spread over the wet surface of a yard, to be soaked by rain, and then covered up by a fresh layer, and finally 'trodden' into indifferent dung?"

This question brings me to the subject of covered yards. The desire to spare straw led to the erection on my own farm, and on another under my direction, of sheds covering a considerable space of yard, besides cattle-boxes. It would be quitting the present subject to expatiate on the various advantages derived from these arrangements; I may observe, however, that one great advantage is the saving in straw which they effect.

With regard to live stock, I have seen them thrive as well in warm, sheltered yards, open to the sun, and well supplied with litter, as in the best-appointed stalls, boxes or covered yards. But the litter is wastefully used, the manure less valuable, and the amount of cartage greater.

The quantity of rain falling in a year, on a yard 50 ft. by 40 ft., at 25 inches per annum, amounts to 25,967 gallons, weighing nearly 116 tons. During heavy rain a large quantity runs off, carrying with it the soluble portions of the manure; but after making due allowance for evaporation, there will remain many tons absorbed by the straw, costing nearly 7d. per ton if carted a quarter of a mile.* In covered yards the dung is concentrated; it is never washed; and cartage—that costly item—is reduced to a minimum.

The quantity of straw required to keep open yards in a comfortable state, depends of course on the weather; and also on the kind of food given to the stock. Turnips

*The cost of 7d. per ton is thus estimated:

	s.	d.
2 men to fill 36 tons,	3	3
5 horses and 4 carts (a trace horse being employed to drag the load on to the heap) at 2s. 6d.,	12	6
2 lads to drive,	1	3
1 man at the heap,	2	2
	20	0

$$\frac{20}{36} = \frac{20 \times 12}{3 \times 12} = \frac{20}{3} = 7\text{d. nearly.}$$

H. R.

and green food increase the secretion of urine, and litter is needed in proportion.

In ordinary years, and in open yards, with sheds, 50 head of stock require, as litter, 300 tons of straw in nine months, from September 1st to June 1st. This reckoning supposes ten horses to be kept in the stable, whose litter is thrown daily into the yards; the rest being cows and fattening cattle. The amount of straw used daily per head is 48 lbs., or twice as much as is required under shelter.

It is stated in an excellent paper on manure, in 'Morton's Cyclopedia,' that 20 lbs. of straw per day are required to litter an ox, in a box containing 100 square feet. This agrees with the quantity used in my own boxes, in each of which I find, after six months' fatting, 8 tons of dung, 6 tons 8 cwts. of which are derived from the ox, and 1 ton 12 cwt. from the litter.* About 24 lbs. per head are used in the covered yards, which are occasionally treated to a dose from the stable-tank.

Fifty head of beasts, fattened in covered yards, will produce in six months—

	Tons.
Voided by the animals,.....	325
Litter, (24 lbs. per head daily,)	100 nearly
	425

425 tons of dung, fit to plough into the ground at once.

The same stock in open yards will produce—

Voided by the animals,.....	325
Litter, (48 lbs. daily,).....	200
Water, ...	?
	525

* Mr. Lawes informs me that he takes from his horse-boxes, of the same size, 6 tons in six months. The one statement corroborates the other, or rather Mr. Lawes shows quite as small a degree as I should have anticipated from the horses being out at work during so many hours. As far as I could ascertain, the supply of straw given to the horse averaged quite as much as 20 lbs. per day; and if this be the case, the horse would contribute about two-thirds as much as the ox to make up 6 tons.—P. H. F.

525 tons of mixture, to be carted to a heap and fermented. This is exclusive of a great weight of water.*

In six months fatting of 50 head of cattle, in covered yards, the amount of straw saved is therefore 100 tons; worth, at Mr. Horsfall's estimate, 35s. per ton, to convert into butter and beef!

I conclude this part of the subject by observing, that the proper use of straw as litter is, to provide a comfortable bed, and to absorb the excrements of the stock. These conditions can only be fully secured when the bed on which the animals lie is covered.

Straw as an Article of Food.

All cattle will eat a certain quantity of straw if they can get it. The calf, who knows no stint, nevertheless, chews straw in his pen, and the pampered medallist at Baker Street, or Bingley Hall, astonishes wondering citizens by condescending to eat a portion of his bed.

Nor is this an abnormal condition of things. Any one who will visit those beautiful southern countries, celebrated by Cobbett in his "Rural Rides," where picturesque little homesteads are dotted about the country, and the sound of the flail may yet be heard, will find the fatting cattle standing by turns at the barn door, disposing of each choice handful as it is put forth, and when duly satisfied retiring to the shed to chew the cud, showing every sign of content and enjoyment.†

The yards of the smaller farmers, as yet untouched by modern innovation, often display an interesting picture of neatness and economical contrivance. That look of com-

* The exact weight of water left in the dung cannot easily be estimated, as a portion evaporates and some runs off; but if 116 tons per annum fall on a yard 50 feet by 40 feet, and if eight such yards are needed for 50 head of stock, and if the dung be exposed during 6 months of average rain fall, the 525 tons of dung will be soaked by 464 tons of water. H. E.

† This picture belongs to the poetry of agriculture. No doubt the best fed beast delights in an occasional look of straw, which doubtless is of great service, directly to digestion, and indirectly to nutrition; but he likes it as the citizen does his plain boiled potato *with his steak*, or the northern tourist his thin oatmeal cake, or single saucerful of porridge *with cream*. But our author shows plainly, further on, that he does not overrate straw as the mainstay of a dietary, nor does he seem to consider the natural form of straw to be the most available form for the *general* purposes of nutrition. The hint on "comfort" which follows is a word in season.—P. H. F.

fort pervades them, which is of the first consequence to the well-being of stock, and without which "Tables of Nutrition" will be studied in vain.

The analyses appended to this paper show that straw of various kinds contains rather more of the muscle and flesh producing substances, and considerably more of those which furnish heat and fat, than turnips. A ton of straw contains more food than a ton of roots. But if cattle are fed on the latter alone they will thrive,* and on the former store stock will barely, under any circumstances, retain their condition. This proves nothing as to comparative value, but it proves that the elements of nutrition must not only exist, but they must exist in an available form.

An ox fed on oil-cake alone would shortly die, because the elements of nutrition would not be presented to him in an available form. But it does not follow that oil-cake presented in some other form could not be digested. The same applies to straw; and, indeed, we should be led to conclude, from the fact of an ox requiring so much bulk in his food, that straw might be employed to supply that need.

Straw is a cheap article with which to distend the stomach, and we ought to use it in just such proportions as we find, by experience, it can be profitably used, as a substitute for other and more expensive food. There are two main elements in our calculation: cost of food, and value of beef produced. There is another: value of the manure. But although nitrogenous and other elements are worth something as manure, they are worth more in the shape of meat. Cattle should be fed, therefore, so that as little as possible goes into the manure. In other words, the food should be given in such a form that the animal

* Surely not alone? When was this ever put to the proof? Farmers, talking in a loose way, may have boasted of fatting beasts on turnips alone, but this was most probably effected in well littered yards; so that they spoke taking no account of the straw consumed in addition, the value of which, as an auxiliary, is sufficiently indicated in the previous page.—P. H. P.

can appropriate the maximum of its most valuable constituents.

There are few farmers who do not use straw to some extent as a substitute for some portion of the more costly articles of diet. Perhaps its most general use, in this way, is as food for store cattle in combination with roots. If 20 lbs. of straw and 1 cwt. of roots cause an ox to thrive as fast as 2 cwt. of roots, then there will be a gain to the feeder by using the former.

		s.	d
Cost of 2 cwt. roots at 7*s* 6*d* per ton.....	=	0	9
Cost of 1 cwt. of roots..... = 4½*d.*			
And 20 lbs. of straw at 1*l.* per ton = nearly 2½*d.*		0	6½
Gain.....		0	2½

This is a saving of 26½ per cent. nearly.

It is a common plan in grazing districts, where roots are scarce, to feed store cattle on about 20 lbs. of straw and 3 lbs. of bean meal. I have found them to do better on straw, with roots instead of meal, even when the supply of roots did not exceed ½ cwt. per head per day. Cattle wintered on straw and meal only become "hide bound" with staring coats.

The cheapest, though not probably the most economical plan of feeding store cattle, is to give them whole roots, and to put the straw, uncut, into racks, making them, in fact, cut and prepare their own food. The objection to this plan is the danger of choking an animal by a small root, or a portion of one, sticking in the throat. There is great risk of such an accident when the roots are small and hard. Mangold, being soft and usually larger than turnips and Swedes, may be given with comparative safety. Store animals fed in this may will do well, and perhaps as well as on prepared food, probably in consequence of the more perfect mastication and deglutition of food when taken slowly.

It was one of the advantages of thrashing by flail that the straw came daily from the barn into the racks as it was wanted. Under the present system it will generally be found more convenient to cut a portion of the straw stack into chaff at a leisure time, and store it away for future use. It is quite indispensable to store it away in a place free from damp, for unless kept perfectly sweet it will disorder the stock, and will not be eaten with relish.

A cheap and excellent floor for a chaff-house is made with asphalte; and unless the site is particularly dry, the interior walls should have a coating of the same material, reaching three or four feet from the ground.

The cost of cutting straw into chaff with a machine driven by horse gear is 6s. per ton. And it costs quite as much to cut it by steam power, unless other machinery, covering part of the expense, is driven at the same time. Under the most favorable circumstances a saving of 2s. per ton may be effected.*

It has been suggested that steaming straw renders it more wholesome. On trial I find that a large apparatus with two "pans" will steam 250 bushels, weighing 1625 lbs., in a day, at a cost of 7s. 6d. per ton. This quantity would be sufficient for 90 head of cattle, supposing each to receive 18 lbs. daily. The expense of steaming a smaller quantity is much greater in proportion, as the cost of fuel and attendance cannot be reduced in proportion to the smaller amount of straw steamed.

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* Details of cost of chaff cutting:

	£	s	d.
1 man to feed,	0	2	0
1 man to supply him,	0	1	8
2 men to straighten the hay or straw,	0	3	4
1 man to remove the chaff to chaff house,	0	1	8
1 man to drive horses,	0	2	0
2 to bring hay or straw from the stack to machine,	0	3	4
1 horse for ditto,	0	2	0
3 horses to work by turns, two at a time,	0	6	0
For use of chaff cutter and horse-gear, (10 per cent. on 25l if used once a week,)	0	1	0
Total,	1	3	0

If 4 tons are cut in a day the cost is 5s 9d per ton: it would, however, be a long day's work to cut that quantity into short chaff fit for feeding cattle, with a 2-horse gear. If allowance be made for short days in winter, when chaff is most in use, and for the interruptions which sometimes occur, 6s per ton is not too high an estimate.—H. E.

The expense of this process is very much reduced when the waste steam of a fixed engine can be employed.

If it cost 6s. per ton to cut straw into chaff, and an additional 7s 6d. per ton to steam it, then it may well be doubted whether the cost of preparation is warranted by the value of the article when prepared.

Straw with its 40 per cent of woody fibre is, at the best, anything but digestible. And we know of no available method for converting the fibre into food. Steaming does not appear to do much for it except to make it palatable; and I believe the advantages derived from steaming may be obtained at much less cost, by fermentation with pulped roots.

Fatting cattle can readily be induced to eat from 10 lbs. to 14 lbs. of straw-chaff by mixing it with their cake or corn. Either fatting or store cattle will eat any kind of chaff when mixed and fermented with pulped roots. My cows are at the present time eating 18 lbs. each daily of straw chaff prepared by this method; and I have found no difficulty in inducing them to eat rape-cake, which otherwise they would not touch, by grinding it small and mixing it into the heap of pulped roots and chaff.

With regard to the value of different sorts of straw, any kind saved in good condition is better than any other kind at all damaged. If at all injured, it should be condemned for litter; none but the best should be given to stock. The nearer it approaches to ripeness when cut, the less wholesome and nutrious it is.

Cattle prefer oat-straw, or barley-straw with clover in it, and both are excellent fodder. Pea haulm is eagerly eaten by sheep, and is very serviceable in the racks of horses and store cattle in the winter months. On sheep-farms every handful should be saved for the ewes and store flock.

Bean haulm is frequently exposed too long in the field,

but if carted in good condition, it should be carefully saved and cut into chaff. For although cattle and horses will eat it from racks during the winter months, they will waste a portion. On dairy farms bean straw is especially useful for the cows, and may be made palatable by fermenting with pulped roots.

It is an interesting fact that well-fed cattle, kept in open yards, will eat more straw during the winter months than other cattle kept under the warm shelter of a roof. The careful manager saves his stock of bean-straw until the cold weather sets in, knowing that at that season its bitter flavor will be disregarded.

During the present winter I compared the quantity of mixed hay and straw-chaff eaten by six oxen, fattened in a warm cattle-house, with that consumed by cattle of the same age and breed in an adjoining yard. Each lot was fed alike in respect of corn and roots, and and as much chaff was given as they would eat. Those in the house ate 14 lbs., and the others 18 lbs. daily; showing a difference of nearly a fourth less carbonaceous food, required by cattle when kept in a condition of artificial warmth.

This fact indicates the value of straw for maintaining animal warmth. It would require a long course of experiments to ascertain its value as compared with hay and other articles of food. The results of experiments of this kind are frequently unlike. They are affected by the age and breed of the animal, by the kind of food used in connexion with the straw, by temperature and other circumstances. When animals are much exposed to cold it may be right to give them considerable quantity of straw, and but little hay, in their food; but it does not follow that it would be right to give the same quantity and proportions, on removing the cattle to a warm house. We have already seen that when kept warm they require less carbonaceous food.

Straw is not sufficiently digestible and nutritious to be a desirable addition to the food of young animals.

Having thus pointed out the known value of straw as an article of food, I now leave it to the reader to decide whether in his own particular case he cannot profitably convert more of it into meat.

Composition of Wheat-straw, air-dried. From Morton's 'Cyclopædia.'

Nitrogenized, or muscle-producing substances,	1.85
Substances free from nitrogen, heat and fat producing substances,	26.34
Insoluble substances,	41.22
Mineral substances,	4.59
Water,	26.00
	100.00

Barley-straw. From Morton's 'Cyclopædia.'

Nitrogenized substances,	1.70
Free from nitrogen, soluble and insoluble,	82.12
Mineral,	5.24
Water,	10.94
	100.00

Oat-straw. By Boussingault.

Nitrogenized,	1.8
Non-nitrogenized, soluble,	22.1
ditto insoluble,	43.8
Mineral,	3.6
Water,	28.7
	100.00

Pea-straw. By Boussingault.

Nitrogenized,	12.55
Non-nitrogenized, soluble,	21.93
ditto insoluble,	47.52

Mineral,	6.00
Water,	12.00
	100.00

Bean-straw. By Way, 'Royal Agricultural Society's Journal.'

Moisture,	14.47
Albuminous matter,	16.38
Oil of fatty matter,	2.23
Woody fibre,	25.84
Starch, gum, &c.,	31.63
Mineral,	9.45
	100.00

Rye-straw. By Boussingault.

Nitrogenized,	1.52
Non-nitrogenized, soluble,	37.10
ditto insoluble,	39.75
Mineral,	2.93
Water,	18.70
	100.00

Clover-hay.

Nitrogenous,	10.29
Non-nitrogenous,	62.63
Mineral,	6.08
Water,	21.00
	100.00

White Turnips, Swedes, Mangolds, (by Voelcker,) and Carrots.

	White Turnips.	Swedes.	Carrots.	Mangolds.
Nitrogenous,	1.143	1.443	1.48	1.81
Non-nitrogenous,	7.799	8.474	11.61	11.19
Ash,	.628	.628	.81	.96
Water,	90.430	89.460	86.10	86.04
	100.000	100.000	100.00	100.00

Rosfield, Halsted.

From the conflicting opinions of scientific men, based on chemical analysis, as to both the feeding and manuring value of straw, and the almost contradictory statements of other writers on this subject, the large promises of direct profit held out by some from the combination of straw-chaff with richer food in cattle feeding, contrasted with the assertions of others that however high may be the true theoretic value of straw for feeding, still it will not answer to buy rich food for the purpose of mixing with straw-chaff; we turn with satisfaction to the practical good sense of the author of the present Essay.

The highest service which can be at present rendered to agriculture is, perhaps, that of the practical man who, informing his mind, and shaping his observations by the light of scientific speculation, will address himself methodically to put things to the proof under his own eye; testing, measuring, and weighing, not estimating results, yet making due allowance for the influence which disturbing causes exercise on the *average* result as compared with the maximum effect which can be produced at some short and picked moment of time.

In this sense our author seems to be truly practical, and if he leans a little to the old-fashioned side, that is the safe side for him who is not unwilling to test and try well recommended novelties. If his estimates differ from those of other recent writers, they may perhaps be found to square with a sober view of average results, when others are rashly generalizing from exceptional cases.

These pages are fully as valuable for the suggestions they offer as for the conclusions at which they arrive. Our author, indeed, gives us full means of estimating the amount of manure which may be made under a given course of feeding in boxes or in covered yards, in which respect his calculations may be of great service in aiding us to arrive at a standard for the composition and value of farm-yard manure—a standard with which all other quali-

ties of such manure must ultimately be compared and measured. But boxes and covered yards are hitherto the exception and not the rule. When, however, he comes to the point which most materially affects the majority of farmers, how far this problem is modified when the cattle are fed in open yards, or even when the litter is thrown out from stalls into such yards, our author does not venture to clench his statement; he has, however, at my suggestion, appended a note to his original Essay, in which he calculates approximately that the rainfall would add 464 tons of water to the 525 tons of manure on which it is supposed to fall.

This estimate is, however, subject to deductions; 1st, for overflow from the yards, and, 2ndly, from the effects of evaporation. It must, however, be borne in mind that the assumed dimensions of the yards are very small, such as are not often found except in connection with modern buildings, where waste from overflow is carefully guarded against. If the buildings are old-fashioned, the area of the yards would probably be much larger, and the drippings from the roof would add considerably to the direct rainfall; these two sources of an increased supply of water would probably compensate for the overflow. Very little is known as to the amount of evaporation arising from a bed of straw, the top of which is comparatively dry; but, as the surface exposed is but small, and the situation sheltered, the loss of moisture from this cause is probably not great, especially during the winter months. Taking Mr. Evershed's calculation as it stands, without abatement, 200 tons of litter would, in open yards, furnish 989, or, in round numbers, 1000 tons of manure. Considering, therefore, that he calculates the amount of rainfall for yards only of such moderate area as seem best adapted to improved modern practice, it may be reckoned that, in large old-fashioned yards, the weight of manure to be carted is

doubled by the rainfall.* This conclusion will be confirmed by regarding the subject from another point of view; that of the quantity of manure commonly reckoned on as ready for use on a farm of a given size. If reference be made either to the requirements of old-fashioned covenants when they prescribed the quantities of dung to be applied in the course of the rotation, or the estimates of practical men when they theorized on the quantity of manure proper to be applied to each crop, it will appear that, a liberal allowance being made for the bulk of straw grown per acre, that amount must be increased four-fold at least to supply the amount of dung required.

But not to refer to by-gone estimates, I will only note that Mr. Morton, in his recent article, vol. xix. of Journal, p. 464, speaking of the Horse labor performed on Whitfield farm, speaks of 1200 tons of dung being carted where only 120 acres of corn are grown. This would give 10 tons of dung as the produce of one acre of straw; or, supposing the litter, as assumed above, to contribute one-fifth of the bulk, and no straw at all to be consumed, otherwise than as litter, we should require for this result an average yield of 2 tons of straw to the acre on autumn and spring corn alike—assuredly a very high average. I think, therefore, that I may safely infer that in open yards the rainfall nearly doubles the bulk of the manure: the excrements, liquid and solid, representing 6 cwt. in round numbers,

The litter, " 4 " " "
The rainfall, " 10 " " "

in the composition of 1 ton of manure.

It is noteworthy that by using covered yards we do not so much diminish the quantity of manure which a farm can produce as alter the proportions of its constituent ele-

* The result will be the same if we allow for the employment of a *smaller* number of yards, and, consequently, fewer head of stock kept for a *longer* period.

Four yards filled the whole year round would, of course, give the same result as eight used only during six months. *Practically*, some modification will be made for the sake of economizing buildings, if not labor; but, *theoretically*, it is easiest to carry out these calculations on the author's original hypothesis.

ments; in this latter case the litter furnishes less than one-fourth of the bulk, so that 200 tons of litter would provide for 850 tons of manure; while on the other hand the amount of the excrements, liquid and solid, would be doubled to attain this result, and the rain water removed.

It may be interesting to consider what the size of a farm must commonly be which can furnish 200 tons of straw for litter, after other demands have been satisfied. The following calculations are made mainly for a light land farm, under the four-course system, as it is chiefly on such soils that a great breadth of straw is grown; and certainly for such the worth of straw, whether as fodder or litter, has a special importance. On these soils 200 acres of corn would probably be required to furnish 200 tons of straw for litter; nor, if we attempt to strike an average for the whole kingdom, will these proportions be much changed. For first, as to wheat-straw, Stephens, vol. i. 1931, cites 1 ton 7 cwt. as Arthur Young's estimate, no account being taken of the weaker soils. He then quotes Scotch authorities, giving 1 ton 5 cwt. and 1 ton 76 lbs. per imperial acre as the results of their experience; and concludes by expressing his own opinion that 1 ton per imperial acre is too high an average for Scotland.

Mr. Morton, in one of his latest papers on the forces used in agriculture, has estimated an acre of a good wheat-crop, tied in sheaves, at 5000 lbs., which seems to be a well-considered and just estimate. Now if of this there be of grain 8 sacks, weighing 18 st. each, the corn alone would weigh 18 cwt. or 2000 lbs. nearly, leaving 3000 lbs. as the weight of the straw, or nearly 1 ton 7 cwt.; a result coinciding exactly with that of Arthur Young.*

With respect to barley and oat-straw, Stephens' estimates place them at about two-thirds and three-fourths,

* It is not clearly stated whether reaped or mown sheaves are intended, but this, though important in itself, does not so immediately affect the object now in view as might at first sight appear, because if the farm has not an ample supply of "haulm" for storing roots and other purposes, a greater deduction will have to be made from the total supply of straw to meet these demands.

respectively, of the bulk of wheat-straw grown per acre, or 18 cwt. and 20¼ cwt. respectively.

We may, therefore safely assume *on the average*, that one acre of wheat and one acre of spring-corn together will not yield more than two tons 10 cwt. of straw, or 250 tons from 200 acres of corn.

I come now to the consideration of the other sources of demand upon the straw-stack besides that of litter.

First we have cart-horses, consuming cut chaff:—our author speaks of ten such horses; this would not be an adequate number for the extent of arable land we are contemplating: 13 would probably be required on an easy-working light soil; but if beasts on the average consume as much straw in the shape of fodder as horses, the result will be the same for 10 horses and forty beasts as it would be for 13 horses and 37 beasts.

I find upon inquiry that in my cart-stables there was consumed, besides corn and a moderate allowance of hay, by the young horses 10 lbs. per day, and by some older mares 15 lbs., of cut wheat-straw and barley-chaff.

In winter the allowance of hay would be occasionally diminished, and considerably more straw eaten in consequence; on the other hand, the short stuff from the barley-thrashing contributes considerably to the subsistence of the horses, and spares cut chaff, whether it may have been taken into account in the bulk of the barley crop, or not.

Now if 10 horses consumed 10 lbs. a-piece of chaff daily during say 8 months of 30 days (240 days), they would consume 10 tons 14 cwt. in all. I calculate therefore that they consume at least one ton of straw a-piece in the course of the year as cut chaff.

Next, in the case of cow-stock, when these are economically fed in those parts of England where the proportion of arable land is large, not less than 1 ton per head of straw

should be assigned to them as food; for a cow having little else to live upon will consume nearly forty lbs. a-day of straw. Growing steers or heifers, moderately supplied with corn or cake (say three or 4 lbs) and roots, without hay, would probably consume half this quantity of straw. Our author speaks of 14 and 18 lbs. of half hay half straw chaff as consumed by fatting oxen under cover, or in open yards. Mr. Horsfall's cows appear to be supplied with about 10 lbs. of wheat or oat-straw per day, besides bean-straw and from 10 lbs. to 12 lbs. of hay.

From these and like premises I conclude that cattle will, on the average, eat with advantage 10 lbs. per day of straw-chaff for say 8 months, or 240 days; or 1 ton 1 cwt. in the year.

The question further arises, how much straw will be profitably consumed by sheep where a feeding flock is kept on 400 acres of arable?

I do not, on a hasty reference to Mr. Bond's excellent paper on Stock Farming (read before the Central Farmers' Club in 1858), find any distinct answer to this question; but the perusal of this paper led me to note, in my own book, the dietary of my flock of 13 score of ewes and lambs at the end of March, 1859. The ewes were then eating five fans of chaff with one sack of malt combs; the lambs went forward, and had 4 stone of meal a-day besides. The fan represented approximately 6 bushels of 6 lbs. each, or 36 lbs.; so that the ewes ate 180 lbs. a-day, or nearly ¾ lb. a-piece. Such an allowance, continued over 100 days, would require, as nearly as may be, 8 tons of straw. Besides the ewes I had about 120 ewe hoggets, which probably ate neatly ½ lb. of cut chaff, when the old ewe ate ¾ lb. per day: 100 such hoggets would, at that rate, eat 5000 lbs. in 100 days, or upwards of 2 tons. 80 fatting weathers also consumed a considerable amount of cut straw-chaff with their cake; but as the amount of straw-chaff eaten by sheep varies very much with the weather and the tem-

perature, I shall content myself by asserting that 8 tons of straw may be economically used during the winter, for sheep feeding, on a farm of 400 acres of arable land, where a breeding flock is kept.

Thus we shall require for the fodder of 50 head of large stock, whether horses or beasts, at least..... 50 tons.
For sheep..... 8 "
For storing roots, when wheat is reaped, waste from thatching, making foundation of stacks, &c., say..... 5 "

Total..... 63 tons

of straw; or fully the excess over 200 tons which 200 acres of *average* corn can be expected to produce.

This note, like the statements which prompted it, is intended to be suggestive rather than conclusive; for throughout we are only opening, not deciding, the important question of the proper use of straw on a farm—a fitting subject for deliberate discussion in some future numbers of the Journal.

The article before us does not profess to dispose of the scientific question of the value of straw for foddder by calculations based on chemical analysis; neither can it appeal to well conducted experiments, instituted for the purpose of determining the relative values of (say) hay and straw, whether bean or white straw, in combination with cake and roots. These remain among the desiderata of agriculture.

The scientific debate seems to lie chiefly within the following limits:—

No very broad or permanent distinction appears to exist between wheat, barley, and oat straw; that variety which is most congenial to the climate and soil of each district seems to be most palatable and most nutriticus for the use of stock in that district. The amount of water in well-harvested straw seems to vary from 10 to about 14 per

cent.;* the mineral ash from about 5 to 7 per cent. The two together may be taken to contain nearly 20 per cent., or one-fifth of the whole substance. Of the remainder some state less than two per cent., others more than 3 per cent., to consist of albumen, or, as others write, albuminous matter. Two and a half per cent. may be taken as a mean estimate.† There is besides a small quantity of oil, variously stated at from ½ to ¾ of a lb. per cent.

Some readers will recollect that recently Professor Nesbitt stated at the Farmers' Club, that 2 per cent., or even 1 per cent., was the utmost extent of oil that could be found in wheat-straw: the above differences, therefore, lie within narrow limits.

But we have a residue of nearly 80 per cent. of carbonaceous matter, and it is about the feeding value of this matter that the conflict of opinion really takes place.

On the one side it is urged that the chief part of this matter is woody fibre, of little value, only one-tenth thereof being soluble in water, or capable of being digested; on the other side, that about half of these substances exist in the form of starch, sugar, and gum, capable of digestion and assimilation, and of immediate use for the supply of the organs of respiration as far as is required, besides being further available for the formation of fat.

It would be a task of considerable difficulty even to state the theories, according to which starch may be converted into sugar, or either of these into fat, within the animal economy. Certain chemical agents are more efficacious than simple water in rendering these carbonaceous substances soluble; and there may be juices in the animal economy, whether acid or alkaline, that produce results analogous to these within the stomach of the animal; moreo-

* If an exceptional analysis gives from 25 to 30 per cent. of water, this may perhaps be accounted for by early cutting or want of the usual stacking.

† Stephens, when estimating the straw crop of an imperial acre of wheat at 3000 lbs., speaks of 40 lbs (1 33) per cent. of gluten, a low estimate; whilst he assigns to "oil or fat" 100 lbs. (or 25 per cent.) a high estimate.

ver some chemical processes, such as that of fermentation, if not carried too far, may assist and prepare the way for the digestive process within. It may be that the admixture of some other kinds of food with straw may conduce to the development of these gastic juices, and to some extent exercise a *condimental* influence on the digestive process.

Practical men long ago liked to have the straw chaff for the cart horses stored some time before use, so that it underwent a gentle heating. This process is now often carried further, whether by the bruising of the clover or grass and weeds which grow together within the barley in the thrashing, or by the admixture of water or small quantities of green clover or roots with the chaff when cut.

But however capable of digestion part of the tissues of the straw may be in themselves; however we may be learning to assist nature, by, in some rude manner, cooking this food; however even the admixture of other kinds of food with straw may aid the process of digestion as well as of nutrition, yet truly scientific men must hesitate before they admit that by some unseen, unexplained process the obedient particles of oxygen, hydrogen, &c., actually do fly hither and thither, and re-arrange themselves just as we should wish them to do, for the formation of fat and oil; whilst practical men, however decidedly they may affirm that cut straw mixed with other food is serviceable already, however hopeful they may be that further knowledge and experience will render it more serviceable, can hardly, from the results of their experience, support those estimates of the value of common straw, which are ba-ed on the above-named theories of nutrition; we cannot speak of oil and fat, starch and sugar, as certainly convertible substances,—if not convertible terms.

Thus far we have been speaking of the worth of wheat, barley, and oat-straw, but there is perhaps a more important because a more valuable kind of straw, that of beans

and peas still to be noticed,—the former kind being specially worthy of attention from the greater breadth that is grown.

It may be worth while to compare Professor Way's analysis of bean-straw, as given by Mr. Horsefall in his Essay, with two analyses of hay derived from the same source.

	Bean-Straw.	Hay 1st Crop.	Hay 2d Crop.
Moisture.....	14.47	12.02	11.87
Albuminous matters.....	16.38	9.24	9.84
Oil and fatty matters.....	2.23	2.68	6.84
Starch and gum.....	31.63	39.75	42.25
Woody fibre.....	25.84	27.41	19.77
Mineral matter.....	9.45	8.90	9.43
	100.00	100.00	100.00

In these analyses several points are worthy of notice. First the general similarity of the constituents of the bean-straw and the first crop of hay, with the important exception that the former is stated to contain 16 per cent. of albuminous matter, against only 9 in the latter; in either case a quantity widely differing from the 2 or 3 per cent. assigned to such substances in the analyses of wheat, barley, or oat straw.

Again, the difference between the first and second crop of hay should be observed, because it probably arose from the latter being cut before it arrived at full maturity; and similar variations would probably be found in the straw of cereals if cut at different stages of their growth. The increase of oil and fatty matter, starch, and gum, accompanied by a proportionate decrease of woody fibre, is very instructive, and would suggest as early cutting of all plants, for the sake of the fodder, as is compatible with the maturity of the grain.

But if, according to analysis, bean-straw would appear to approximate to the value of hay, if not to surpass it, how comes it that its merits have not been more generally recognized and appreciated?

The best answer will perhaps be found by pointing to the somewhat similar fate of rape-cake. Until Mr. Pusey, prompted probably by the teaching of chemical analysis, advocated the use of rape-cake as food, it was called oil-dust, and used almost exclusively as manure.

Mr. Pusey called attention to the fact that, examined under the recognized heads of chemical analysis, it was equal to linseed, then the only oil-cake in use for feeding, in its constituents.

The practical man has never been able to extract as much virtue out of it as out of linseed-cake (unless it be for dairy purposes,) and that perhaps chiefly in consequence of its heating qualities and pungent taste, properties of which the analysis took no account. And yet its merits for food are so far recognized, that some farmers, myself among the number, think it almost a sinful waste to drill in nice fresh rape-cake as manure.

In like manner, toughness of structure and unpleasantness of flavor may have stood in the way of the use of bean-straw; yet the first objection may be overcome, and the second perhaps even converted into an auxiliary, in like manner as so many acids and bitters have been converted into stimulants.

On some few clay farms, where roots are scarce and a breeding flock is kept, the value of bean-straw has been partially recognized as winter stover for the ewes, which, however, only pick over the the dried leaves and smaller stalks at the barn-door; but in this manner, as also when it is furnished to cart horses for winter stover, but little of the crop is consumed as food, the great bulk being converted at once into manure.

No observations on this subject, however incomplete, especially if they would guard against exaggerated estimates as to the convertibility of straw into flesh and fat, can pass without notice the feeding experiments of Mr. Horsfall.

That gentleman has undoubtedly had great success with his stall feeding, on a system in which straw plays a very important part; and undoubtedly he has rendered great service to agriculture, by the public spirited manner in which he has been at the pains to communicate the results of his valuable experience to the world at large.

His practice combines two or three distinguishable and peculiar features:

1st. His food is chiefly steamed; and much may depend on the sound discretion exercised, as to the amount both of moisture and of heat to be left in the mixture at feeding time.

When I have known the steaming process to be imperfectly tried, the animals become restless, and the food passed too quickly through them, probably from want of due precaution in these respects.

Again, the materials used by him under the denomination of straw are various, and generally blended together; so that it remains uncertain to which, or to the combination of which, the chief merit of the result is due.

He uses wheat-straw; and, again, the husks of the oat (not oat flight, but the husk or refuse of fine oatmeal;) and, thirdly, bean-straw.

Speaking from conjecture, I should assign the lowest place to the first-named and the highest to the last-named ingredient, with an inclination, perhaps, to attribute the most benefit to that element which has been tested and tried the *least*, in accounting for an unusually successful result.

There is much that calls for further investigation in these experiments; but we may congratulate Mr. Horsfall on his success, and try to emulate it, with the assurance that the comparison of attempts, whether successful or the reverse, will ultimately disclose the point on which success hinges, if, as we can hardly doubt, that result be attainable.

The importance of the subject of the economical pro-

duction of beef cannot be doubted at the present moment, when the system of fattening stock at a loss, with a view to being remunerated by an increased produce of grain, seems to be drawing to an end, whilst the demand for meat is on the increase.

The more a man feels assured that statements of direct profit by stall-feeding bullocks will not bear inspection, or, at the best, only apply to exceptional cases, the more anxious he must be that more economical methods of producing beef should be recognized, than those which have hitherto prevailed.

If we would see how, in theory, a high value may be assigned to straw, we need only take the hypothesis that it contains 30 or, as a maximum, 40 per cent. of gum, starch, sugar, &c., and that these substances are worth 1*d* per lb.

One ton of straw would then contain 30-100 of 2240 lbs. of starch, &c., which at 1*d* per lb. would give us the following value: 56*s*. per ton; or, in the case of 40 per cent. of gum, starch, &c., 75*s*. nearly per ton.

If we are at all prepared for such results, we shall not demur to the phosphates in straw being valued quite as highly as when they are found in any other form.

We shall not dwell upon the improbability of any practical farmer buying potash at the price at which it is sold as an article of commerce.

We shall hardly pause to inquire why scientific writers are not now content with valuing nitrogen at 6*d* per lb., the price it bore in the most palmy days of the nitrogen theory.

On the other hand, if carbonaceous matter be so valuable to the animal, we may rather demur to its utter depreciation in the shape of manure, as food for the plant; for the narrow-leaved grasses at nearly all the stages of their growth, and for the broader-leaved tribe at the time of their early development.—P. H. F.

Letter from MR. JONAS, *communicating a Plan for Cutting and Storing Straw Chaff to the best advantage.*

JULY 17, 1860.

MY DEAR SIR:

I have just invented a plan for cutting straw into chaff, which gives me much satisfaction. I have purchased of Mr. Maynard, of Whittlesford, in this county, one of his powerful chaff-cutters, with sifting apparatus attached, which cutter I can work from a wheel or drum attached to my threshing machine, which is driven by a 9 horse-power steam-engine at the same time that I am threshing corn. The straw, when delivered from the threshing machine, is carried up an inclined plane by spiked rollers to a height of about 9 feet; it then comes down an inclined rack, nearly yelmed and ready for cutting into chaff. Three men yelm the straw, mixing with it a small quantity of green fodder, such as rye or tares. When cut into chaff, it is sifted and carried into an empty barn or chaff-house and well trodden down, and about 1 bushel of salt mixed with a ton of chaff, so as to cause a fermentation. All this is effected with no more manual labor than would be required to take away the straw and stack it in the ordinary manner. Within the last few days I have threshed and dressed the corn and at the same time cut the straw into chaff from the produce of about 80 acres of wheat, at a cost, too, not exceeding 45*s.* 7*d.* per acre for cutting, the straw produced on an acre of wheat. This chaff I shall not use until next October, when I purchase my beasts for winter grazing, and none but those who have tried this plan of old chaff so managed, as compared with fresh-cut chaff, can believe the advantage in value of the old chaff for feeding stock. I can work off the produce of about 8 acres of good strong wheat per day, thus cutting about 800 fans per day, the chaff being cut shorter and better than by the hand box.

Three men yelm the straw and feed the chaff-cutter, and

if the threshing-machine be placed near the barn or chaff-house which is to be filled, two men can carry the chaff into the barn; two or three boys should tread it down close, so as to cause it to heat. The only extra expense is for from 4 to 5 cwt. of coal per day. If, however, the straw is stacked as threshed and cut into chaff afterwards, the expenses of cutting and sifting with Maynard's chaff-cutting would be as follows:—

	£.	s.	d.
1 man to move the straw from stack to yelm,..	0	2	0
4 men to yelm straw,.....	0	8	0
2 men to carry away chaff.....	0	4	0
3 lads to tread chaff down, 6*d*.....	0	1	6
Hire of engine and chaff-cutter (this includes 1 man to feed chaff-cutter and engine-man)...	1	10	0
Coals, 5 cwt.....	0	4	6
Water, carting.....	0	2	0
	£2	12	0

This will cut from 600 fans* to 900 fans per day, according to the length of cut; the first cut being about 3-16ths of an inch in length, the latter about ⅛ths. The cost would be, the very short cut, 1*d*. per fan; the latter cost ⅓ of a penny per fan; but, by cutting the chaff at the same time you thresh, you save 47*s*. per day, or, in fact, cut 800 fans for 4*s*. 6*d*.

Yours faithfully,

P. H. Frere, Esq. SAMUEL JONAS.

*Mr. Jonas reckons a fan of chaff to measure 5 bushels, and to weigh 28 lbs.—P. H. F.

EXPERIMENTS WITH TOP DRESSINGS ON WHEAT.

[Every well authenticated statement relative to the effect of manures on wheat is of high value to the farmers of Michigan, who make the wheat crop a specialty. The following statement of the results of a series of experiments to ascertain the exact effects of certain manures when applied to wheat in Great Britian, is by Augustus Voelcker, the chemist to the Royal Agriculture Society of England, and the report is taken from the Journal of that Society. —SECRETARY.]

There is no lack of experiments made with guano, nitrate of soda, soot, shoddy, gas-water, and other nitrogenized substances, which are occasionally used as top-dressings upon wheat. Experience has shown that all these manures may be used, with more or less advantage, for the wheat crop; and that, generally speaking, they are more effective the more nitrogen they contain. Thus Peruvian guano or nitrate of soda, which are both very rich in nitrogen, are justly considered more powerful wheat manures than soot or shoddy—two materials much poorer in this element. Whilst I consider the relative proportions of nitrogen in different fertilizers, intended to be used for wheat or other cereal crops, to be an important element in estimating the comparative commercial and agricultural value of artificial manures, such as Peruvian guano, nitrate of soda, or sulp ate of ammonia, I am of opinion that the form or state of combination in which the nitrogen is contained in the manure materially affects its efficacy. Any one who has tried side by side nitrate of soda, Peruvian guano, and shoddy, must have felt surprised at the different degree of rapidity with which the effects of these three fertilizers are rendered perceptible in the field. I

have noticed more than once that, under favorable circumstances, the effects of nitrate of soda became visible in the course of three or four days in the darker green color and more luxuriant appearance of the young wheat, whilst it took eight or ten days in the case of guano, to produce a similar effect. On wheat dressed with shoddy no apparent effect was produced even after the lapse of four or six weeks. So slow is the action of the latter that a superficial observer might well doubt the efficacy of shoddy as a wheat manure, for it often produces no visible improvement in the wheat crop, and it is only after threshing out the corn that it can be ascertained that shoddy has had some effect upon the yield of corn. These examples appear to indicate that nitrogen in the shape of nitric acid has a different practical value from that which it possesses in the shape of ammonia, and that it has again another value in the form of nitrogenized organic matter. It must be confessed that our knowledge of the comparative efficacy of nitrogen, in its various states of combination, is extremely limited, inasmuch as we scarcely possess any sufficiently accurate and trustworthy comparative field experiments which are calculated to throw light on this subject. As yet the sure foundation on which an explicit opinion as to the relative merits of nitrogen—in the shape of nitric acid, ammonia, or organic matter—can be given, is altogether wanting. It is true the experience of practical men affords certain useful indications to the scientific observer, but nothing more. In the absence of clear, unmistakable, and sufficiently extensive practical evidence, no definite answer can be given to the question so frequently addressed to the agricultural chemist—shall I apply nitrate of soda or guano upon my wheat?

We do not know, even in a general way, the comparative efficacy of nitrates and of ammoniacal manures: how is it possible, I would ask, to answer such a question in a particular instance? The importance of this question will be

admitted by every one, especially at a time when the price of corn is low, and that of Peruvian guano high. Extensive deposits of nitrates of potash and soda are more likely to be discovered when dilligent search is made after them than new and extensive deposits of guano equal to, or approaching in efficacy, Peruvian. Apart from the theoretical aspect, the question as to to the relative merits of nitrogen in the shape of nitric acid or ammonia is of great practical interest. Fully impressed with the importance of this subject, I have undertaken, at the request of the Council of the Royal Agricultural Society, a series of field experiments with top-dressings upon wheat, and have now the pleasure of laying before the members of the Society the results of a series of experiments made last season (1859). Similar experiments I hope to continue from year to year; for the longer I am engaged in carrying out experimental trials in the field, the more I am convinced that the experience derived from one, two, or three years' experimenting in the field is alike inadequate to further the progress of scientific agriculture, and to supply the farmer with information from which he can derive practical advantage.

The time has arrived when an extension of field experiments is imperatively demanded. Practical experiments should be instituted in all parts of the country, and tried on every description of soil, and under the most varied conditions. They should be conceived in a philosophical spirit, and carried out with that accuracy and love of truth which ought, and generally does, characterize the labors of the student of natural science. Mere random trials, made without plan or definite object in view, are only calculated to lead astray, and thus do more harm than good. Unfortunately, success in a field experiment cannot always be secured: the disturbing influences which spoil the result are numerous and frequently uncontrollable; and, as the labor, anxiety, and expense which attend field experi-

ments are very great, it can hardly be expected that many agriculturalists will engage in this work. After having gone to the trouble of preparing and measuring out the land, selecting the seed, procuring and weighing out the various fertilizers intended for trial, after having them analyzed and taken notes from day to day of the progress of the experimental plots, it is a sore trial for the experimentalist to have to report, "Results vitiated by the ravages of the black caterpillar." Indeed any one who is not prepared to meet with more disappointment than success, will be wise to desist from trying his hand at field experiments. I am led to make this remark because only the season before last my experiments upon swedes were entirely spoiled by the black grub. Again last season I instituted an extensive series of experiments with top-dressings upon barley, and, after having incurred considerable expense and taken much trouble, all that I can report is, "Results vitiated by the ravages of the wire-worm."

My experiments upon the wheat crop, I am happy to say, were unusually successful. No hail, drought, mildew, or rust, interfered with the success of the trials. I was fortunate enough to find a good and most equal plant on a perfectly level and uniform field of the Royal Agricultural College farm. The day on which the top-dressings were applied was calm and cloudy; a moderate rain that fell on the next day washed the various manures into the soil, and secured at once their uniform distribution. The season, on the whole, was favorable to wheat, the weather at harvest time was unusually splendid, and on none of the experimental plots was the crop laid in the slightest degree.

The field on which the experiments were tried is perfectly level, and throughout of uniform depth. Its extent is about 20 acres; and last season the whole was in wheat after seeds; 2 acres covered with a very equal plant were measured out for the experiments and carefully divided

into 8 parts of equal length and breadth. Each experimental plot thus occupied the space of ¼ acre. The 2 acres under experiment were surrounded by a considerable breadth of the general wheat crop, except on one side. Although the headland, and a portion of the rest of the land, separated on that side the experimental plots from the adjoining hedge, it was considered prudent to reject the ¼ acre next to the hedge. Seven plots of ¼ acre each in extent thus were left. These plots were manured as follows :

To Plot I. was applied 70 lbs. of Peruvian guano; or at the rate of 2½ cwt. per acre.

" II. " 49 lbs. of nitrate of soda; or at the rate of 1¾ cwt. per acre.

" III. " 45 lbs. of nitrate of soda and 42 lbs. of common salt; or at the rate of 1½ cwt. of salt and 180 lbs. of nitrate of soda per acre.

" IV. " 1 cwt. of Proctor's wheat manure; or at the rate of 4 cwt. per acre.

" V. " 1½ cwt. of the same wheat manure; or at the rate of 6 cwt. per acre.

Plot VI. was left unmanured.

To Plot VII. was applied about 1 ton of chalk-marl; or at the rate of about 4 tons per acre.

These quantities of the different fertilizers were obtained in each case at an expense of 1*l.* 12*s.* 6*d.* per acre, except the larger dose of wheat-manure on Plot V., the cost of which was 2*l.* 8*s.* per acre. In this estimation the actual prices paid were taken. Peruvian guano, at the time of application, was 13*l.* per ton ; nitrate of soda, 18*l.* 10*s.* per ton ; common salt, 1*l.* 10*s.* per ton ; wheat-manure, 8*l.* per ton.

The price of the chalk-marl could not be accurately ascertained, and probably 8*s.* per ton will be rather under

than above the price at which it was procured. The manures were all finely sifted (except the chalk-marl), mixed with about ten times their weight of fine soil, and sown broadcast on the afternoon of the 22d of March, 1859.

The land was clean, in good condition, and moist. A portion of the soil from the experimental field was submitted to a mechanical and to a chemical analysis. It yielded the following results :—

Composition of Experimental Wheat-Field; Field No. 2 of the Royal Agricultural College Farm, Cirencester.

a. *Mechanical Analysis.*

Moisture,	4.18
Organic matter and water of combination,	9.75
Lime,	18.63
Clay,	61.76
Sand,	5.68
	100.00

It will be seen that there is but little sand or silica, that can be separated by washing, in this soil. Notwithstanding, the straw of the wheat was very stiff.

b. *Chemical Analysis.*

Moisture,	4.18
*Organic matter and water of combination,	9.75
Oxides of iron and alumnia,	16.25
Phosphoric acid,	.12
Sulphate of lime,	.31
(Containg sulphuric acid),	(.18)
Carbonate of lime,	18.63
Magnesia,	.18
Potash,	.41
Soda,	.11
Insoluble silicates and sand (chiefly clay),	50.45
	100.39

* Containing nitrogen, .57
Equal to ammonia, .69

In the preceding analysis the phosphoric acid was determined by the molybdate of ammonia process, which furnishes exceedingly accurate results. The proportion of phosphoric acid found (.12) is but small; nor does this soil contain much sulphuric acid or available alkalies. On the other hand, it is rich in lime and clay, and would no doubt, be much more productive if the field were deeper. Being rather shallow, the agricultural capabilities of the experimental field are naturally below the average.

In shallow, stiff, and retentive soils organic matter accumulates rapidly. Most of the nitrogen indicated in the above analysis is present in the shape of organic matters: *i. e.*, the roots, leaves, and other remains of the preceding crop. A small portion only of nitrogen occurs in this soil in the state of ready-formed ammonia.

Before stating the yield of each experimental plot, I shall notice briefly the appearance of the crop at different times, and give the analysis of the manures employed in the experiments.

PLOT I.—Top-dressed, March 22d, with Peruvian guano, at the rate of 2½ cwts. per acre, cost 1*l.* 12*s.* 6*d.* per acre.

On the 8th day after the application of the guano, the effects of this fertilizer became slightly visible, on the 10th day they were a little more marked, and after a fortnight, plainly observable even to a superficial observer. Compared with the unmanured wheat, the color of the wheat on plot I., though not so dark green as on the portion dressed with nitrate of soda, was deeper and the plants looked altogether more luxuriant than on the unmanured plot. The darker green color was perceptible for more than six weeks, and then gradually disappeared. At the same time the wheat-plants grew more vigorously, and at harvest time were a good deal higher than the wheat in the surrounding field. On analysis the Peruvian guano gave the following results:—

Moisture,	17.12
*Organic matter and ammoniacal salts,	51.31
Phosphates of lime and magnesia (bone-earth)	22.55
Alkaline salts,	7.94
Insoluble siliceous matter (sand),	1.08
	100.00

These numbers express the composition of a genuine good Peruvian guano.

PLOT II.—Top-dressed, March 22d, with nitrate of soda, at the rate of 1¼ cwt. per acre, cost 1*l.* 12*s.* 6*d.* per acre.

Already, the fourth day after application, the effects of nitrate of soda became slightly visible, and in the course of a week the dark green color of the wheat on Plot II. looked remarkably well throughout the season, and at harvest time was as high as the wheat dressed with guano. The nitrate of soda employed in this experiment was very pure, as will be seen by the subjoined analysis :—

Composition of nitrate of soda.

Moisture,	1.87
Pure nitrate of soda,	95.68
Chloride of sodium,	.79
Sulphate of soda,	1.17
Sand,	.49
	100.00

PLOT III.—Top-dressed, March 22d, with nitrate of soda and salt, at the rate of 180 lbs. of nitrate of soda and 1¼ cwt. of salt per acre, cost 1*l.* 12*s.* 6*d.* per acre.

The remarks made with respect to Plot II. apply equally well to this plot. There was no visible difference in the appearance and general character of the wheat on Plots II. and III., and at harvest time it was impossible to say which of the two would yield the heavier crop.

Many persons who passed by the wheat-field, which

*Containing nitrogen,	14.64
Equal to ammonia,	17.17

could be overlooked from the turnpike-road, were astonished at the dark-green colored wheat on the two plots upon which nitrate of soda was put. In comparison with the surrounding wheat, which had received no top-dressing, the two ½acre plots looked as if a painter had put an extra layer of green color on the wheat. The common salt used on plot III. was ordinary agricultural salt.

PLOT IV.—Top-dressed, March 22d, with wheat-manure (Proctor's), at the rate of 4 cwt. per acre, cost 1*l.* 12*s.* 6*d.* per acre.

The effects produced by this top-dressing were not so soon visible as those produced by nitrate of soda. However, in less than a fortnight the wheat was decidedly improved, and, as far as improvement went, kept pace with the wheat dressed with guano. At harvest time it was impossible to say which of the Plots, No. I., II., III., or IV., was the best. An inspection of the following analysis will show that the wheat-manure used on this and following plot was an excellent fertilizer. It will be noticed that it contained a large quantity of nitrogen, partly as sulphate of ammonia, partly in the shape of soluble and insoluble nitrogenized organic matter. In addition to these important constituents, it contained both soluble and insoluble phosphates, as well as common salt, gypsum, and a few other matters of less value.

Composition of Wheat Manure.

Moisture,	13.60
*Sulphate of ammonia,	10.97
† Soluble nitrogenized organic matter,	8.08
† Insoluble nitrogenized organic matter,	14.72
Bi-phosphate of lime,	3.54
Equal to bone-earth rendered soluble by acid,	(5.52)

*Containing nitrogen,	2.32
Equal to ammonia,	2.82
†Containing nitrogen,	3.53
Equal to ammonia,	4.28
Total quantity of nitrogen,	5.85
Equal to ammonia,	7.10

Insoluble phosphate of lime (bone-earth).....	9.45
Sulphate of magnesia.....	.61
Hydrated sulphate of lime,.....	19.73
Chloride of sodium (common salt),.....	16.84
Insoluble siliceous matter (sand),...	2.46
	100.00

PLOT V.—Top-dressed, March 22d, with Proctor's wheat-manure, at the rate of 6 cwt. per acre, cost 2*l.* 8*s.* per acre.

During the first three or four weeks there was no difference perceptible in Plots IV. and V., but in the beginning of June it became plain to a careful observer that the wheat on this plot was evidently all the better for the extra dose of manure.

The wheat continued to improve, and took the lead of the experimental plots. At harvest time the wheat on this plot was perceptibly higher in straw than on any of the other plots, and the ears of corn likewise appeared rather longer and better filled than on any of the other portions of the experimental field. The reapers, without exception, pronounced the crop on plot V. the heaviest of all; and the correctness of their opinion, it will be shown, was fully borne out by the direct weighings of the yield. The contrast in the appearance of this plot and the rest of the general wheat-crop was most striking. Although the wheat on No. V. was high, it stood perfectly erect at harvest, and produced strong, healthy straw.

PLOT VI.—Left unmanured.

The wheat on this plot was fully three inches lower than on the preceding plot. Although it was not so dark green as the crop on plot I., II., III., IV., V., it was, nevertheless, healthy looking, but rather thin.

PLOT VII.—Top-dressed with chalk-marl, at the rate of about 4 tons per acre.

There was not the slightest difference perceptible in this and the preceding plot, and it was plain to any one that

the marl had had no effect whatever. On analysis this chalk-marl was found to have the following composition:

Composition of Chalk-Marl.

Moisture,	2.49
Carbonate of lime,	69.28
Oxides of Iron and alumnia,	.36
Phosphate of lime, (bone-earth),	.68
Sulphate of lime,	trace
Magnesia and alkalies,	.45
Soluble silica,	8.29
Insoluble siliceous matter (fine sand),	18.55
	100.00

Towards the end of July the crop was nearly ripe; at that time I could not notice any marked difference in the state of ripeness of the crops on the 7 experimental ¼ acres.

The wheat was reaped in the first week of August, and threshed out on the 24th of August, 1859, and the whole of the produce of corn and straw carefully weighed: it was omitted however, to weigh the chaff and cavings.

The following table exhibits the yield of corn of each experimental plot, and the produce calculated per acre:—

TABLE *showing the Produce, in lbs. and bushels, of Corn of Experimental Plots of ¼ acre, and Weight and Bushels per acre.* (*Average weight per bushel,* 60 *lbs.*)

		Produce in corn per plot.		Produce in corn per acre.	
Plot		lbs.	bushels	lbs.	bushels
I	2½ cwt. guano per acre	601½	10	2406	40 1-10
II	1½ cwt of nitrate of soda per acre	570	9½	2280	38
III	180 lbs. of nitrate of soda and 1½ cwt. of salt per acre	600	10	2436	40 6 10
IV	4 cwt. of Proctor's wheat manure per acre	565	10	2270	39 ½
V	6 cwt. of ditto per acre	663	11	2652	44 1 5
VI	Unmanured	405	6¾	1620	27
VII	Chalk marl, 4 tons per acre	404½	6¾	1618	27

By direct Weighings it was found that the weight per bushel was in—

No. I.....	60½ lbs.	No. V.....	60 lbs.
" II.....	60 "	" VI.....	60 "
" III.....	60½ "	" VII.....	60½ "
" IV.....	60½ "		

Practically speaking, there was thus no difference in the weight of corn per bushel. Not having had much experience in filling bushels of corn, I found that I could not always fill the bushel-measure so uniformly as not to get a difference of from ½ to 1 lb. in the weight of different bushels of the same corn.

The fallowing table exhibits the produce in straw :—

TABLE *showing the produce in straw of each ¼ acre Plot, and Produce per acre.*

		Per plot.			Per acre.			
Plot.		cwt.	qrs.	lbs	tons.	cwt.	qrs.	lbs.
I.	2½ cwt. of guano,.....	5	3	0	1	3	0	0
II.	1¾ cwt of nitrate of soda,.....	6	0	2	1	4	0	8
III.	180 lbs. of nitrate of soda and 1¾ cwt. of salt,.	6	0	12	1	4	1	20
IV.	4 cwt. of wheat manure,.....	5	3	23	1	3	3	8
V.	6 cwt. of wheat manure,.....	6	3	2	1	7	0	8
VI.	Unmanured,.....	4	1	20	0	17	2	24
VII.	Chalk marl,.....	4	0	20	0	16	2	24

For the sake of better comparison, the increase per acre in corn and straw over unmanured portions of the experimental field, is stated in the next Table.

TABLE *showing the increased Produce per acre in Corn and Straw over Unmanured Plot, in lbs. and bushels.*

		Increase in corn.		Increase in straw.		
Plot.		lbs.	bushels	cwt.	qrs.	lbs.
I	Peruvian guano,.....	786	13 1 10	5	1	4
II	Nitrate of soda,.....	660	11	6	1	12
III.	Nitrate of soda and salt,.....	816	13 6-10	6	2	24
IV.	4 cwt. of Proctor's wheat manure,.....	750	12 1 2	6	0	12
V.	6 cwt. of ditto,.....	1032	17 1-5	9	1	12
VI	Unmanured,.....	1620 produce.	27 increase.	17 produce.	2 decrease	24
VII.	Chalk-marl, ...	none.		1	0	0

An examination of the preceding results suggests the following remarks :—

1. The plot manured with chalk-marl furnished as nearly as possible the same amount of corn as the unmanured

plot, and rather less straw. The produce in the one amounted to 1620 lbs. of corn, and in the other to 1618 lbs.; or each gave 27 bushels of wheat.

In some parts of England, chalk-marl is applied with considerable benefit to the wheat crop, but as the soil of the experimental field contained 18 per cent. of carbonate of lime, it could not be expected that a marl, which owes its fertilizing properties almost entirely to the carbonate of lime and to a little phosphate of lime which it contains, should produce any marked effect upon the wheat crop. Indeed, I did not expect any increase from the application of this marl, and used it in this experiment chiefly to ascertain the extent of variation in the produce of two separate 1-4 acre plots. The result plainly shows that the experimental field was very uniform in its character and productiveness. We may also learn from this result that the efficacy of a manure is greatly affected by the chemical composition of the soil to which it is applied. However beneficial chalk-marl may be in other localities, it cannot possibly do any good on land which contains already an abundance of the same elements which are supplied in the marl.

2. The application of only 1¼ cwt. of nitrate of soda raised the produce in corn to 38 bushels, and that of straw to 1 ton 4 cwt. 8 lbs. We have thus here an increase of 11 bushels of corn, and 6¼ cwt. of straw, at an expense of 1*l.* 12*s.* 6*d.*

3. By mixing nitrate of soda with common salt, the produce in corn was raised to 40 bushels, and that of straw to 1 ton 4 cwt. 1 qr. 20 lbs. It appears thus that the admixture of salt to nitrate of soda was beneficial in this experiment. The quantity of salt used amounted to only 1¼ cwt.: notwithstanding, it had a decidedly beneficial effect upon the produce. As salt is cheap, it may be worth while to try in future experiments whether a larger dose of salt mixed with nitrate of soda will be of advantage.

4. Peruvian guano produced very nearly the same quantity of corn as the mixture of nitrate of soda and salt, but somewhat less straw.

5. The smaller dose of wheat manure gave almost ½ a bushel less increase in corn, and rather more straw, than guano. The difference in the yield of these two plots, however, is trifling.

6. The larger dose of Proctor's wheat manure (6 cwt. per acre,) it will be seen, gave an increase of 17 1-5 bushels of corn, and 9 cwt. 1 qr. 12 lbs. of straw, over the yield of the unmanured plot. 4 cwt. of the same wheat manure gave an increase of 12½ bushels of corn, 6 cwt. 12 lbs. of straw. One-half more of wheat manure, or 6 cwt., very nearly gave one-half more increase in corn and straw. The chief points of interest which attach to these experiments are:

1. That nitrate of soda applied by itself materially increased the yield of both straw and corn.

2. That the admixture of salt to nitrate of soda was found to be beneficial.

3. That guano produced as good a result as nitrate of soda.

4. That the increase in corn and straw corresponded with the quantity of the wheat manure which was used.

5. That ammonia and nitrogenized organic matters—which proved inefficacious or even injurious in relation to turnips, grown on a similar soil to that on which the wheat was raised—had a most marked and decidedly beneficial effect upon the wheat crop.

It may not be amiss to contemplate these experiments in an economical point of view, and to ascertain to what extent the different top-dressings have repaid the outlay of money—which, it will be remembered, was 1*l.* 12*s.* 6*d.* per acre in all cases, except in the case of the larger dose of wheat manure, the application of which entailed an expenditure of 2*l.* 8*s.* per acre. Leaving unnoticed the extra

produce of straw, which in some cases was considerable, I shall only take into account the produce in corn. The present average price of wheat of ordinary quality is about 42*s.* per quarter. Taking 42*s.* as the price of wheat per quarter, we obtain the following money-value of the increase in produce, as the clear profit realized by the top-dressings after deducting the expense of the manures:

Table showing the Money Value of Increase in Corn per acre over Unmanured Plot, and Clear Profit after deducting the price paid for Manures.

Plot.		Money increase in Corn			Cost of Manure.			Clear Profit.		
		£.	*s.*	*d.*	£.	*s.*	*d.*	£.	*s.*	*d.*
I.	Guano,	3	8	9	1	12	6	1	16	3
II.	Nitrate of soda,	2	17	9	1	12	6	1	5	3
III	Nitrate of soda and salt,	3	11	5	1	12	6	1	18	11
IV.	4 cwt. of wheat manure,	3	5	7	1	12	6	1	13	1
V.	6 cwt. of wheat manure,	4	10	4	2	8	6	2	2	4
VI.	Unmanured,									
									loss.	
VII.	Chalk-marl,	none.			1	12	6	1	12	6

It will be seen that, with the exception of the chalk-marl, all the top-dressings paid very well, and that the more liberal outlay for manure produced by far the best return in money.

I purpose to note down the relative produce of next season's crop on each of the one-fourth acre experimental plots, and hope thus to ascertain whether the efficacy of the various top-dressings was spent in one season or not. In estimating the profits arising from the use of these top-dressings, the condition in which the land is left after the removal of the crop ought, by rights, to be taken into account. It appears to me that the productiveness of the different plots will be found to vary considerably.

In nitrate of soda we have only two constituents, namely, soda and nitric acid. Soda has scarcely any fertilizing value, and in combination with nitric acid it is, moreover, readily removed by the rain into the subsoil or drainage water; for soils do not possess the power of retaining nitrates. Supposing any nitrate of soda to have been left in the

soil, it is not likely to produce any effect on the succeeding crop. All the more important mineral constituents which are required for the growth of wheat must be furnished by the soil top-dressed with nitrate of soda. The amount of available mineral fertilizing matters in the soil, therefore, will be less after the removal of the wheat crop, and the soil will be found, I think, in a poorer condition.

The portions of land top-dressed with guano and wheat manure, on the other hand, were supplied not only with ammoniacal salts and nitrogenized organic matters, but also with valuable mineral matters—such as phosphoric acid, sulphuric acid and alkalies. On calculating the proportion of phosphoric acid which is removed in the produce of Plot I., I find that the guano supplies more phosphoric acid than is removed in the produce of corn and straw. After harvest, therefore, the land will actually be richer in this important fertilizing matter than it was before the application of guano. Again I question very much whether the total amount of nitrogen in guano and in the wheat manure will be used up in the growth of one wheat crop. It appears to me more likely that some will remain in the soil, ready to benefit the succeeding crop. However, this point can only be decided by direct experiments. Unlike nitrates, ammoniacal matters are retained in all soils containing a fair proportion of clay, which circumstance is of course in favor of guano and ammoniacal manures in general as top-dressings for wheat.

Since, then, guano and artificial manures, resembling in composition the wheat-manure used in my experiments, supply the wheat-crop with constituents which must be furnished entirely by the soil when nitrate of soda alone is employed as a top-dressing; and since an excess of ammoniacal matter will be retained in the soil, whereas an excess of nitrate is subject to loss; I am inclined to think that the land dressed with guano and Proctor's wheat-manure will be left in a better condition than the plots ma-

nured with nitrate of soda. On the whole, I am of opinion that in the recorded experiments the wheat manure and guano have proved to be preferable as top dressings to nitrate of soda. However, nitrate of soda is an excellent material for producing a rapid improvement in sickly looking wheat. We have used nitrate of soda last season with great advantage on our farm. A slight sprinkling with a mixture of nitrate of soda and salt causes a marvellous improvement in poor, thin, yellow-looking wheat. On the thin, brashy soils in our neighborhood the young wheat is apt to turn yellow and sickly in dry springs, especially on the brows of hilly fields; nothing can be better in such a case than a dressing with nitrate of soda and salt. By this means Mr. Coleman, who manages the Royal Agricultural College farm, has been able to grow good crops of wheat on thin, brashy and exposed fields, which usually without such a dressing yielded but a scanty produce.

Nitrate of soda and guano often contain hard lumps, which ought to be carefully broken down before application; this is generally neglected, to the great disadvantage of the farmer. It is true there is some difficulty in reducing guano to a fine powder, and there is trouble connected with passing through a fine sieve nitrate of soda or guano; but no trouble or additional expense for labor should deter any one from reducing artificial manures, intended to be used as top-dressings, into a fine powdery condition; for the difference in the efficacy of manures in such a condition, and the same manures applied in a rough state, is much greater than most people believe who have not tried the experiment.

Whilst speaking of the application of top-dressings, I cannot refrain from observing that all artificial manures—such as nitrate of soda, guano, or a mixture of nitrate of soda and salt—should not only be passed through a fine sieve, but they should also be mixed with three or five

times their own weight of fine red ashes, dry soil, or sand, before sowing them broadcast by hand, or what is much more convenient and better, by the broadcast manure distributor. Chambers' or Reeves' dry manure distributor cannot be too highly recommended for sowing, in a most uniform and expeditious manner, top-dressings of every description.

In conclusion, I beg publicly to thank Mr. Coleman for the obliging manner in which he has assisted me in carrying out the preceding experiments.

Royal Agricultural College, December, 1859.

ON THE QUANTITY OF NITROGEN IN THE SOIL,

At various depths, as found in the recent Experiments of Professor M. J. Isadore Pierre, of Caen, France, with remarks by J. G. Macvicar, D. D.

From the Journal of the Highland and Agricultural Society of Scotland.

The pleasures of agriculture are so much enhanced by our being able to take a scientific view of its processes, and to regulate our practice by trustworthy theory, that even on this ground, and apart altogether from economic advantage, every step that is made in agricultural chemistry is well worthy of our favorable regard. And such appear to us to be the results obtained by the Professor of the Faculty of Science at Caen named above, by his most elaborate analysis of the soil at various depths in reference to the quantity of nitrogen which it contains.

The importance of nitrogen to the agriculturist it is impossible to overrate. It has now been fully established that the entire mass of plants is composed of cells, and that every cell, besides carbon and water (or its elements,) requires nitrogen as essential to its life and functions. It is the same with every cell that goes to the formation of the animal body. Nitrogen is essential to its construction. There is indeed a remarkable difference as to the position of this element in the vegetable, as compared with the animal. These two kingdoms of nature are in this respect, as in so many others, the converse of each other. Thus, in the plant the cell wall is composed wholly of carbon and water (or its elements,) the nitrogen being found in its interior, and forming a very small per centage, perhaps not more than 1 per cent. of the whole. In the animal, on

the other hand, nitrogen enters into the construction of the cell-wall to the extent of from 15 to 18 per cent., while the most mature contents of the cell (fat, phosphate, carbonate, &c) are destitute of nitrogen. And hence also it appears that, while nitrogen is indispensable to the life and growth equally of plants and animals, it becomes a great object, in growing vegetable matter with a view to its being used as food for animals, to charge it as highly as possible with nitrogen. On this subject, indeed, as on so many others in the field of agriculture, the most conflicting doctrines are maintained with equal confidence by their respective advocates. After it had been all but settled, in popular belief at least, that in order to the formation of flesh and blood, and the stamina of growth and well being in the animal generally, nitrogenous food was indispensable as the food of the animal, it has been quite recently maintained that stock thrive best on food containing little or no nitrogen. And if we consider this merely as the reaction against the preceding doctrine which had been carried too far, all is well. The future will strike the balance and determine the truth. But if it be presented to science as a positive disparagement of nitrogen in the animal economy, we cannot be too slow to accept it. On this subject we may mention a very beautiful instance, showing how theory and practice may meet and explain each other at the opposite ends of the earth. M. Payen, Secretary of the Central Agricultural Society of France, in his valuable work on Alimentary Substances,* when treating of the dietetic value of rice, and its deficiency in nitrogen for a normal diet, whence two-thirds more must be consumed than would be required, in so far as carbon is concerned, goes on to propose a diet in which this excess of rice is replaced by beans, in which nitrogen is abundant, and shows that in this way as much nourishment and strength

* *Des Substances Alimentaires et des Moyens de les améliorer, de les conserver et d'en reconnaître les altérations.* Par A. Payen, Membre de l'Institut, &c. 8vo. Paris.

will be imparted to the animal system by the daily eating of 775 grammes, as by the eating of 1857 grammes of rice by itself, while much embarrassement to the digestive powers will be avoided. Now this mixed aliment of rice and leguminous seeds has been known in India, among the vegetarian races there, time immemorial, as of the greatest value, a fact which is indeed denoted by its name—viz., Brahman's food. It surely cannot be doubted that nitrogenous food is of the greatest value. But apart from all such questions, nitrogen, and that in large quantities, is indispensable to the agriculturist. When we have said above that plants contain and require as food but little nitrogen, this is to be understood as referring to the quantity of carbon and water (or its elements) which enter into their composition. The absolute quantity of nitrogen which they require is immense. Thus every good cutting of clover, of which there may easily be two in the year, carries off from the soil at least 1 cwt. of nitrogen per acre, a quantity which, supposing it in the aeriform state, and of atmospherical density, would measure nearly 10,000 gallons. And so of other crops, though not all of them to the same extent.

And hence one of the many interesting questions in agriculture—from what source is all this nitrogen derived, and how may it be most economically obtained, crop after crop? Is it obtained directly from the atmosphere?—or is it always in the soil?—or must it in some measure at least be supplied year after year by nitrogenous manure? In favor of the first of these alternatives, it occurs to us at once that nearly four fifths of the entire atmosphere consists of nitrogen. If, then, the living plant can absorb and assimilate directly and with ease the atmospherical nitrogen, here is an inexhaustible supply, and the agriculturist has no occasion to be solicitous about the matter. But can plants, in point of fact, lay hold of the nitrogen as

it floats around them, and appropriate it for the growth of their organs? That is the question. And we may say that it has of late secured the attention of some of the first physiological chemists of Europe. Among these we may mention M. Georges Ville, of Paris, by whom many most elaborate experiments have been performed, and with this result, according to his own interpretation of them, that when the conditions of the experiment are assimilated as far as possible to those of nature, plants do feed directly on atmospherical nitrogen. And this conclusion has been admitted to be justly drawn from his experiments by a commission of the Institute, appointed to report upon them, and composed of all the most eminent chemists of France, viz., MM. Chevreul, Dumas, Regnault, Payen, Decaisne and Peligot.* But this state of things is controverted by Boussingault and many other distinguished chemists. For our own part, we conceive it quite impossible to solve the question in the way attempted. In spite of every attempt to the contrary, ammonia constantly makes its apparition in water; and where water is used day after day, as it must be in the artificial cultivation of plants, there is always room for suspecting that any excess of nitrogen found in the full grown crop, above what was introduced in the seeds, may have been derived from this water. At first sight, indeed, and looking to the question in a merely physical point of view, one would certainly expect that plants, living as they do in the midst of the nitrogen of the atmosphere, and absorbing and assimilating the other atmospherical elements as they are known to do, would absorb its nitrogen also. But when we look to the chemical character of nitrogen, as compared with the other constituents of the air—carbonic acid, oxygen and vapor—we are forbidden to extend their habits and action to it; and we feel that it may be fairly questioned whether nitrogen be directly absorbed by plants at all.

*Recherches Expérimentales sur la Végétation. Par M Georges Ville. Absorption de l'Azote de l'Air par les Plantes. Report fait par M. Chevreul au nom, &c., Paris.

That it is absorbed by the soil, however, there can be no doubt; and to determine the quantities in which it exists in the soil at various depths, is the aim of the experiments which we have alluded to at the beginning of this article. And here we may remark, that the states of combination in which it exists could not be determined; but that all nitrates are excluded from the reckoning.

Of these experiments there were two series—the first having for its object to ascertain the quantity of nitrogen in the surface soil to the depth of 40 centimetres (nearly 16 inches;) and the second to ascertain the same fact to the depth of 1 metre (nearly 40 inches.) The fields were at a considerable distance from each other, the soil argilo-calcareous and a little siliceous, deep, and such as bore perfectly well clover, lucern, and sainfoin.†

That field whose surface soil alone was investigated, was about 2 hectares (nearly 5 acres) in extent. It had grown dring two years a mixed crop of clover and sainfoin. It had been tilled about a year before, and had not received any manure for four years. Holes were dug at suitable distances, and in eight different places, with a view to obtain average samples of soil, and from each of these two were taken, one to represent the surface soil to the depth of 20 centimetres (nearly 8 inches,) and the other the layer just below, to the depth of 40 centimetres (nearly 16 inches.) Now, of these the former was found to contain, per kilogramme of soil, 1.659 grammes of nitrogen, and the latter 1.157 grammes; that is the former contained .1659, and the latter .1157 per cent, of nitrogen in combination, exclusive of nitrates. Calculating from these data the quantity of nitrogen which each of these layers contained per hectare (2.47 x acres,) and supposing the soil to have twice the specific gravity of water—that is, 2000 kilogrammes per cubic metre—it is found that a layer of earth of 10,000 square metres, or one hectare of surface,

†An account of M Pierre's experiments, in all their details and in his own words, will be found in the *Annales de Chemie et de Physique* for May, 1860, p. 68.

20 centimetres in thickness represents a volume of 2000 cubic metres, weighing 4000 kilogrammes. Consequently, it would contain 4000 times 1.659 grammes; that is, 6636 kilogrammmes of nitrogen. Now, a kilogramme being 2.2 x lb. avoirdupois, and a hectare being 2.47 x acres, we may reduce the French weights and measures to our own by multiplying by 2.2 and dividing by 2.47, or more shortly, by multiplying the quotient of these numbers, that is by .892. Now this gives for the surface layer no less than 5919 lb. of combined nitrogen per acre. A similar calculation gives for the second layer 4628 kilogrammes per hectare, and therefore 4128 lb. per acre.

The second set of experiments were conducted in a field of coarser soil, somewhat neglected, and very stony beneath. Samples of the soil were taken so as to divide the metre of descent into four equal parts, and therefore 25, 50, 75 centimetres and 1 metre below the surface, corresponding nearly to 10, 20, 30, and 40 inches. And here analysis gave the following quantities of combined nitrogen in the different layers:

	Per Hectare.	Per Acre.
1 Layer.....	8366 kilos.....	7462 lb.
2 "	4958 "	4413 "
3 "	3479 "	3103 "
4 "	2816 "	511 "
Total,.....	19,620	17,491

On this series of experiments the author bestowed great labor, estimating the nitrogen both with and without the stones. Nor did he stop his inquiries at the depth of one metre. He analyzed such soil as he found between the stones at a greater depth, and found that if that soil were formed into a stratum of 25 centimetres, or 10 inches in thickness, it would contain 1433 kilogrammes per hectare; that is 1279 lb. per acre.

Nor was it only the actual quantity of nitrogen at vari-

ous depths which he determined, but the rate of decrease of this element at the descent it made. And in reference to this, he obtained the interesting result that, supposing all the nitrogen to come from above, it meets with more obstructions to its descent in the upper than in the lower strata, a phenomenon not without analogies in nature. Thus he found that the nitrogen in the second layer is 57 per cent. of that in the first; that that of the third layer is 70 per cent. of that in the second; and that that in the fourth layer is 81 per cent. of that in the third, each rising above the preceding by a common difference of eleven.

As to the state of combination in which the nitrogen thus found exists in the soil, M. Pierre did not attempt to determine it; and, indeed, such an attempt, in the actual state of chemistry, would be altogether vain. The probability is, that it exists in many forms, and that in some of these alone it is immediately suited for being the food of plants. Whatever the forms, however, the actual state of physiological chemistry would be disposed to say that one only; ammonia, could be the direct food for plants. And, indeed, it may be safely affirmed that ammonia is the only form in which nitrogen is useful, in the first instance, as a tectonic element of the vegetable tissue. It admits of being very beautifully shown that water and ammonia, or rather let us say aqueous vapor and ammoniacal vapor (for when stated in this way, the two agents show their analogy better.) play analogous parts in the economy of the vegetable and the animal world respectively. It admits of being shown that cellulose, which form the ground of the vegetable tissue, and gelatin, which forms the ground of the animal tissue, are beautifully related to each other, an atom of ammoniacal vapor in union with a proportional number of atoms of carbon replacing in the latter an atom of common vapor in union with a smaller proportional number of atoms of carbon, as existing in the former.*

*The First Lines of Science Simplified, p. 97. By J. G. Macvicar, D. D.

But it is a question whether ammonia may not be developed out of its elements within the vegetable organization, as well as in the soil outside of that organization; and if so, then it must be regarded as a product of assimilation in vegetables rather than their food.

This latter view has many arguments in its favor; and if so, then what is wanted in the soil for the good of the crop is not solely nitrogen existing already in the form of ammonia, but nitrogen existing in such a form that, on the touch of the living plant, it is ready to resolve itself into ammonia, either on the vegetable periphery or in its interior.

If we adopt this view, we are then fully able to account for the well-known value of ammoniacal manures. That they cannot be wanted from any defect of ammonia or nitrogen in the soil follows of necessity from M. Pierre's experiments, and all others that have been made on the question. But if ammonia be the only form in which nitrogen is useful to the plant, what the soil, though rich in nitrogen, may stand in need of in order to its fertility may be an agent which may act as an alterative in the soil, and dispose, facilitate, or determine the nitrogen in it to enter into union with hydrogen, so as to resolve itself into ammonia. Now, of all such agents, a host of analogies would lead us to infer that ammonia itself, or a manure spontaneously developing ammonia, would be the best; for of all alterative or catalytic actions, that of assimilation is the most generally to be depended upon. On this principle the action of ferments and antiseptics is to be explained, and, indeed, almost every molecular change.

But if this be a true account of the action of nitrogenous manures, it follows that those are in the wrong who, because they find so much nitrogen in the soil independently of all manure, maintain that nitrogenous manure cannot be required; but it follows also, that those are in the wrong who look at the nitrogenous manure introduced

as the sustenance of the crop. The manure, according to the view now advanced, is valuable as an alterative for modifying the nitrogen otherwise existing in the soil, so that it becomes accessible and assimilable by the crop; and the question of nitrogenous manures becomes quite a definite problem. It may be true, perhaps, that chemistry in its actual state is not capable of solving that problem. But even at the first blush of the theory it points to quality of manure rather than quantity; for catalytic or assimilative action needs only a beginning. That a little leaven leaveneth the whole lump, is a great principle, not only in the moral world, but in the molecular world also. A few moleculeš may be enough to set it agoing, and once begun, it spreads like an epidemic (which is indeed an illustration of the same). The force increases as the cube of the time during which it acts.

But, independently of all speculation on this subject, we are able to see beautifully, from the analyses of M. Pierre, as to the depth to which nitrogen penetrates the soil, the good economy of growing, whether similtaneously or alternately in the same field, crops with surface roots along with such as have deep-striking roots. The latter, in fact, besides yielding a crop, serve for pumping up nitrogen to the surface, and for leaving it there, in what is left there of themselves, for the next crop, if it be such a one as has surface-roots—oats or barley, for instance. We are also able to see with regard to deep-rooting crops that in every case where the soil is deep, and our object is not only to obtain a crop, but to do all that we can for the soil, they ought to be cultivated in such a way as to permit their roots to penetrate as deep as they are disposed to go. Now this is not always done. Clover and other leguminous crops are indeed left free to spread outwards and downwards their roots, as far as they please to go; but turnips are badly hampered and curiously thrown up high on ridges—a mode of cultivation which must be as injuri-

one on deep soils as it may be necessary on shallow soils. What is wanted is a mode of cultivation which may combine the agricultural advantages of the broadcast with the economy of the drill husbandry, and which, by bringing up nitrogen and such earthy elements as are needed from the deep soil, may compensate by the "tops," supposing them to be left on the field where they grew, for the bulbs, which may be carried away; and thus leave the turnip field in a fit state for a light cereal crop, with grass and clover seeds, for the following year. Turnips may be grown with advantage in a climate where they cannot be safely exposed on the field during the winter; and the system of "eating off" though doubtless accompanied by many advantages, is not without a risk. What renders the cultivation of the turnip so interesting and important is, that this winter crop may be grown in descending from the mountains as soon as agriculture becomes possible, while at the same time its value to the fleecy occupants of the mountain can scarcely be exaggerated.

REPORTS

OF

COUNTY AND LOCAL

Agricultural and Horticultural Societies in Michigan,

FOR THE YEAR 1859.

REPORTS

OF

COUNTY AND LOCAL AGRICULTURAL SOCIETIES,

FOR THE YEAR 1859.

BERRIEN COUNTY.

The Ninth Annual Fair of the Berrien County Agricultural Society, was held on the grounds owned by the Society, in the city of Niles, on the 27th, 28th and 29th days of September, 1859.

Entries were made on the first day as follows:

Class 1.	Horses,	72
Class 2.	"	50
Class 3.	Trotting Horses,	7
Class 4.	Durham Cattle,	4
Class 5.	Devon "	15
Class 6.	Natives and Grades,	32
Class 7.	Sheep,	17
Class 8.	Swine,	7
Class 9.	Poultry,	14
Class 10.	Field Crops,	24
Class 11.	Vegetables,	72
Class 12.	Fruit,	32
Class 13.	Cooperage,	4
Class 14.	Farming Implements,	23
Class 15.	Manufactures of Grain,	3
Class 16.	Manufactures of Leather,	14
Class 17.	Horse Shoes and Shoeing,	12
Class 18.	Domestic Manufactures,	4

Class 19. Domestic Manufactures, Ladies,..... 46
Class 20. Needle and Shell Work,..... 17
Class 21. Painting, Drawing, &c.,..... 16
Class 22. Bread, Preserves, &c.,..... 67
Class 23. Flowers and House Plants,..... 5
Class 24. Dairy Products,..... 16
Class 25. Miscellaneous Articles,..... 45
Class 26. Special List,..... 30

Making in all, six hundred and forty-eight entries, a larger number than had ever been made at any former exhibition.

The lists were placed in the hands of the visiting committees on the second day, and they proceeded to the discharge of their duties.

The third day the fair opened with a grand exhibition of horses, followed by an exhibition of cattle arranged in classes.

At 2 o'clock, P. M., an able address was delivered by Hon. Francis W. Shearman, of Marshall.

Then followed a trial of trotting horses and female equestrianism.

The awards of premiums made by the several committees was then read by the Secretary.

At 5 o'clock, P. M., the fair closed. The attendance was larger, and altogether, the fair was the most successful one that has ever been held in the county, showing an earnest and increasing interest in agricultural and mechanical affairs in this region, highly gratifying.

The premiums awarded amounted to over five hundred dollars, which were all paid in cash.

The Society own seven acres of ground within the city limits of Niles, beautifully located, and handsomely fitted up, and enclosed with a substantial fence.

The following officers were chosen for the ensuing year:

President—D. O. Woodruff.

Vice President—A. P. Knox.

Treasurer—R. C. Paine.

Secretary—R. W. Landon.

Executive Committee—John J. Hamilton, F. A. White, H. Chamberlain, Wm. Smythe Farmer, N. Hamilton, Nathan Fitch.

The Tenth Annual Fair will be held on the 26th, 27th and 28th days of September next.

R. W. LANDON,
Secretary.

CALHOUN COUNTY.

Report of the Calhoun County Agricultural Society for 1859:

The officers elected for the ensuing year are, John Houston, President; A. O. Hyde, Treasurer; S. S. Lacey, Secretary; Executive Committee—Jer. Brown, D. Dunakin, Wm. R. Schuyler, Bradford Arthur, Warren Frink.

Receipts of the Society for membership,.....	$627 00
Admission tickets,.....	224 75
County order, 1859,.....	278 60
" 1860,.....	139 47
	$1,268 82
Disbursements in premiums and expenses of the Fair, ...	$670 40
Other disbursements, ...	580 62
Total, ...	$1,251 02

The following premiums were awarded at the meeting in December:

To H. Atkinson, for best ½ acre sweet rutabagas,...	$2 00
Wm. C. White, 2d best, " " ...	2 00
" ½ acre of carrots,.....	2 00
Divillo Hubbard, best acre of corn husked,.....	3 00
E. H. Lawrence, greatest No. shade trees,.....	3 00

P. H. Barnes, buggy and sulky, 2 premiums,....Pat. Rep.
A. Hadden, seedling strawberries,.....Youatt on the Pig.
A. Potter, best scraper,.....Pat. Office Rep.

All of which is respectfully submitted.

SETH LEWIS.
Secretary,

THE COUNTY FAIR—MEETING OF THE AGRICULTURAL SOCIETY.

Meeting was called to order by the President, E. C. Manchester, of Battle Creek.

The address was then delivered by S. H. Preston, Esq. of Marshall.

A unanimous vote was then moved, that Col. Preston's address be published in all the county papers.

The Society then proceeded to the election of officers for the next year, which resulted in the choice of the following gentlemen:

President—John Houston, of Fredonia.

Treasurer—A. O. Hyde, of Marshall.

Secretary—S. S. Lacey, of Homer.

Executive Committee—Jer. Brown, of Emmett; D. Dunakin, of Eckford; Wm. R. Schuyler, of Marshall; Bradford Arthur, of Sheridan; Warren Frink, of Battle Creek.

Vice Presidents—Wm. Cook, of Clarendon; A. Hadden, of Lee; Jos. Bentley, of Convis; John Cooper, of Penfield; Homer Case, of Bedford; Charles Coy, of Battle Creek; Wm. H. Coleman, City of B. C.; L. Autchinson, of Emmett; James Connelly, of Marshall; Charles Dickey, City of Marshall; Isaac Hewitt, of Marengo; A. D. Shipman, of Sheridan; J. C. Shaw, of Homer; Wm. B. Morrison, of Albion; A. C. Robinson, of Eckford; Putnam Root, of Fredonia; R. Sanderson, of Newton; Philetus Gould, of Le Roy; Wm. Holmes, of Athens; Wm. Hammond, of Burlington; T. H. Southworth, of Tekonsha; Wm. Marble, of Clarence.

It was then, on motion, unanimously resolved that the thanks of this Society be tendered to Mr. Dibble, for his arduous labors in behalf of the Society since its organization, as its Treasurer.

On further motion, it was

Resolved, That this Society donate to Mr. I. W. Wilder, former Secretary, the sum of $50.

The Cornet Band then gave one of their beautiful airs.

Mr. Hewett moved a vote of thanks to the Cornet Band, which was unanimously carried.

Col. Dickey then announced the following premiums:

PREMIUMS FOR 1859.

HORSES.

The committee awards as follows:

Best 5 year old stallion,	Lemuel Downs,	$5 00
2d " "	Wm. Farnsworth,	3 00
Best 4 year "	William Farnsworth,	4 00
2d " "	J. C. Shaw,	3 00
Best 3 year "	E. D. Beach,	4 00
2d " "	G. B. Fountain,	3 00
Best 2 year "	C. Fulkerson,	3 00
2d " "	A. L. Hays,	2 00
Best 1 year "	James Connelly,	2 00
2d " "	L. C. Griffin,	1 00
Best sucking horse colt,	Thomas Knight,	2 00
2d " "	Lemuel Downs,	1 00
Best 2 year old horse colt,	George McKay,	3 00
2d " "	W. J. Carpenter,	2 00
Best single gelding,	F. S. Clarke,	3 00
2d "	Marvin Diver,	2 00
Best 4 year old mare and over,	W. Prindle,	4 00
2d " " "	Isaac Hewitt	3 00
Best brood mare with colt at side,	T. Knight,	5 00
2d " " "	R. Gould,	3 00

Best 3 year old mare,	S. B. Shepard,	$3 00
2d " "	Homer Case,	2 00
Best 2 year "	Joseph Jandall,	2 00
2d " "	Peter Mitchell,	1 00
Best 1 year "	D. P. Wood,	2 00
2d " "	W. B. Buckingham,	1 00
Best sucking colt,	Thomas Knight,	1 00
2d " "	Burr Mitchell,	Dis'ry.
Best team draft horse,	Orrin Mann,	5 00
2d " "	W. C. White,	3 00
Best matched horses,	C. T. Gorham,	5 00
2d "	D. C. Hartung,	3 00
Best 3 year old gelding,	S. Graham,	3 00
2d " "	Hiram Boughton,	2 00

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BLOOD CATTLE.

The judges entered upon their duties with the supposition that they were to judge of *pure blooded* stock, inasmuch as other judges were appointed for graded stock. But finding very little or no pure blood cattle, and that by former precedents and instructions asked and obtained from the Executive Committee, they were to judge of graded stock as well; they were induced to alter their first plan, and report as follows:

Best Durham bull, 2 years old,	Barber & Pearl,	$4 00
do 1 do	Tillotson & Wormley,	3 00
2d best do.,	George R. McKay,	2 00
Best Durham bull calf,	H. A. Tillotson,	2 00
Best Devon bull, 3 years old,	W. R. Schuyler,	5 00
2d best do.,	Warren Frink,	3 00
Best Devon bull 2 years old,	W. R. Schuyler,	4 00
2d best do.,	A. Rowley,	2 00
Best Devon bull calf,	W. R. Schuyler,	2 00
2d best do.,	do.	1 00
Best Ayershire bull, 3 y'rs old and ov.,	J. Kelleher,	5 00

Best Ayershire bull, 2 yrs old and over, J. Kelleher,	$4 00
do 1 do do	3 00
Best Durham dairy cow, 4 years old and over, H. A. Tillotson,	4 00
2d best do., Warren Frink,	3 00
Best do., 3 years old, H. A. Tillotson,	3 00
2d best do., do.,	2 00
Best do., 2 years old, Warren Frink,	3 00
Best do., 1 do., S. P. Wormley,	2 00
Best Devon dairy cow, 4 years old and over, Warren Frink,	4 00
Best do., 3 years old, W. R. Schuyler,	3 00
2d best do., do.	2 00
Best do., 1 year old, Warren Frink,	2 00
Best Devon heifer calf, do.,	2 00
2d best do., do.,	1 00

C. A. MILLER,
JAMES CONNELY,
JAMES POWERS.
Committee.

—

GRADE AND NATIVE COWS, AND HEIFER CALVES.

Committee award as follows:

Best grade dairy cow, H. A. Tillotson,	$3 00
2d best do., David Watson,	2 00
Best 2 year old grade heifer, James Connely,	2 00
2d best do., John Lusk, jr.,	1 00
Best 1 year old heifer, D. Watson,	1 00
2d best do., W. Frink,	50
Best native dairy cow, James Connely, no competition but worthy of a premium,	3 00
Best 1 year old native heifer, C. Miller,	1 00

OXEN, STEERS, GRADE BULLS, &C.

Best working oxen, 4 years old, M. E. Barhite,....	$4 00
Best yoke 3 year old steers, broke, S. G. Pattison,.	3 00
Best yoke 1 year old steers, John Lusk, jr.....	2 00
2d best do., Ed. Tillotson,.....	1 00
Best yoke calves, F. R. Tillotson,.....	1 00
Best grade bull, 3 years old, A. M. Fitch,.....	3 00
2d best do., J. & W. T. VanSickle,.....	2 00
Best grade bull, 2 years old, Ira Andrus,.....	2 00
Best grade bull, 1 year old, F. B. Wright,.....	2 00
2d best do., D. Watson,.....	1 00
Best bull calf, P. Hall, ...	2 00
2d best do., C. Miller,.....	1 00

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SHEEP.

The committee are of the opinion that the show of sheep for this year, 1859, is the poorest that has ever been on this ground, and that they have found a number of pens they consider unworthy of a premium. We make the following awards:

Best full blood Spanish Merino buck, F. B. Wright,	$2 00
2d best do., do., do.,	1 00
Best full blood Southdown, E. T. Bryan,.....	2 00
Best Leicestershire buck, D. Coonradt,.....	2 00
2d best do., John Morgan,.....	1 00
Best cross buck, M. Diver,.....	2 00
Best grade buck, C. C. F. Ball,.....	2 00
2d best do., Ira Murdock, poor at that,.....	1 00
Best 5 full blood Spanish Merino ewes, F. B. Wright,	2 00
Best 5 Leicestershire ewes, L. G. Crossman,.....	2 00
2d best do., E. T. Bryan,.....	1 00
Best 5 cross ewes, Marvin Diver,.....	2 00
Best 5 Spanish lambs, F. B. Wright,.....	2 00
Best 5 grade lambs, J. Connely,.....	2 00
Best 5 Leicestershire lambs, J. Morgan,.....	Dis'ry.

SWINE.

Best Suffolk boar, Ira Mordock,	$ 4 00
2d " L. Diver,	2 00
Best Grade boar, R. T. Perry,	4 00
2d " Chester Miller,	2 00
Best Suffolk breeding sow, Ira Mordock,	4 00
2d " " L. Diver,	2 00
Best Grade breeding sow, C. C. P. Ball,	4 00
2d " " L. Diver,	2 00
Best pen 3 pigs under six months old, Jos. Jandall,	3 00
2d " " " " Ira Mordock,	2 00
Best pig under six months old, Jos. Jandall,	1 00
2d " " " C. C. P. Ball,	50

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DAIRY AND BREAD.

Best sample butter, not less than 50 lbs., Mrs. John Houston, jr.,	$ 2 00
2d best do., Miss Martha Pearl,	1 00
Best cheese, Mrs. John Pearl,	2 00
2d " Mrs. Thomas Chisholm,	1 00
Best tub butter, not less than 15 lbs. made in May and June, Mrs. L. G. Crossman,	3 00
2d best do., Miss E. A. Pearl,	2 00
Best loaf salt rising, Miss E. C. Wormley,	1 00
Best do. milk rising, Mrs. J. Woolsey,	1 00
Best do. yeast rising, Mrs. John Houston,	1 00
Best do. corn bread, Mrs. J. Woolsey,	1 00
Best do. graham bread, Miss Matilda Bunker,	1 00

Besides the specimens of butter to which premiums were awarded as above, there were several other of very excellent taste and quality, one of which the committee deemed worthy of particular mention, to wit: the sample worked by Miss M. Bunker; it is but a trifle inferior to that which received the second premium.

There was not as much cheese exhibited as last year,

but from the samples shown it is clear that the County, notwithstanding the season has been so unfavorable, has fully sustained its reputation in its production.

The sample of bread numbered 376 is considered worthy of special designation. The committee would in conclusion state, that they are fully satisfied that the producers of the most useful articles of domestic manufacture have been for the past year in no wise lacking in their usual energy and skill.

GEORGE WILLARD,
MRS. JOHN PEARL,
MRS. DR. BEACH,
MRS. G. BEARDSLEE,
Judges.

—

GRAIN.

The committee awarded the premium to A. Boughton, of Marengo, for the best acre of winter barley.

Statement.

The following is, to the best of my remembrance, the statement required by the Rules of your Society:

Kind of soil, Burr Oak plains; sown in an orchard upon corn stubble, under shade of good sized apple trees; plowed twice, the first time nearly the middle of June, the second time near the last of August; depth, between seven and eight inches; manure, none used; quantity of seed sown was two bushels and three pecks, upon two hundred rods of ground; sown broadcast and harrowed in; time of seeding, the 5th or 6th of September; harvested the last week of June; from two hundred rods of ground fifty-one and one-half bushels, machine measure, well cleaned and measures heaped. Said barley was pastured through the winter and until the middle of April, by sheep.

ALDEN BOUGHTON.

Subscribed and sworn to before me, the 29th day of September, 1859. MILO SOULE, *Notary Public.*

Best acre winter barley, A. Boughton,..... $3 00
Best bushel winter wheat, A. C. Richardson,..... 1 00
2d do., T. Chisholm,..... 75
Best bushel winter barley, Alden Boughton,..... 75
Best bushel spring barley, J. Richfield,..... 75
Best twelve ears flour corn, J. P. Beach,..... 50
Best do., red blaze, A. Hadden,..... 50
Best do., dent, D. Hubbard,..... 50
Best do., sweet, S. Ladd,..... 50
Best do., dutton, F. S. Hamilton,..... 50

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GARDEN VEGETABLES.

Best sample of Cauliflower, Robert Gardner,..... $0 50
Best 3 heads red Dutch, Arthur Paul,..... 50
Best do., Drumhead, " 50
Best do., Early York, H. A. Pierce,..... 50
Best do., Early London, Orville Miller,..... 50
Best do., Celery, Robert Gardner,..... 50
Best 5 Carrots, C. Miller,..... 50
Best 5 Beets, for table use, J. Radford,..... 50
Best 5 White Flat Turnips, C. Hanchett,..... 50
Best 5 White Ruta Bagas, J. T. Hayt,..... 50
Best 5 Parsnips, J. Radford,..... 50
Best 5 Salsify, George Woodruff,..... 50
Best 5 Peppers, G. Beardslee,..... 50
Best ten Onions, R. Gardner, ... 50
Best 2 Pumpkins, S. H. Bunker,..... 50
Best 2 quarts Lima Beans, G. Beardsley,..... 50
Best 2 quarts Butter Beans, J. A. Robinson,..... 50
Best peck White Beans, C. Miller,..... 50
Best 2 cheese Pumpkins, J. A. Robinson,..... 50
Best 2 crook neck Squashes, B. Chamberlin,..... 50
Best 2 do., Boston Marrow, " 50
Best 2 Hubbard Squashes, J. A. Robinson,..... 50
Best ½ bushel Sweet Potatoes, G. Beardsley,..... 50

Best ½ bushel Mountain June Potatoes, J. Banks,..	$0 50
Best ½ do., Jersey Blue, O. F. Gaylord,.....	50
Best peck potatoes for table use, "	50
Best do., Mexican Potatoes, O. Miller,.....	50
Best do., Neshanock, J. M. Leonard,.....	50
Best do., Long Pinkeyes, "	50
Best do., Prince Albert, P. B. Goodell,.....	50
Best do., Early Junes, Arthur Paul,.....	50
Best do., California, Nelson Paul,.....	50
Best 2 Water Melons, R. Emory,.....	50
Best peck Onions, R. Gardner,.....	50
Best ten Tomatoes, "	50
Best Koel Rabi, J. A. Robinson,.....	50
Best ten stalks Rhubarb, S. F. T. Brown,.....	50
Best 5 Winter Radishes, M. Lansing,.....	50
Best 3 Egg Plants, R. Gardner,.....	50

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FRUIT.

The committee on fruit report as follows:

Best 15 varieties apples, H. Aurand,.....	$3 00
2d best do., J. A. Robinson,.....	1 00
Discretionary, Hiram Ball,.....	
Best five varieties, G. G. Collins,.....	2 00
2d best do., J. A. Robinson,.....	1 00
Discretionary, W. R. Schuyler,.....	
" Mary Gordon,.....	
Best 5 varieties seedlings, D. Woolley,.....	2 00
2d best do., George Erringnon,.....	1 00
Discretionary, A. Hawkins,.....	
Best 5 varieties pears, Wm. Newbre,.....	2 00
2d best do., Mrs. J. W. Gordon,.....	1 00
Best variety, 5 specimens each, Kate Gordon,....	1 00
2d best do., Stephen Mason,.....	50
Best exhibition peaches, N. Fleming,.....	1 00
2d best do., Wm. Gregg,.....	50

Best seedling peaches, N. Fleming,.....	$1 00
Best cultivated do., John C. Richfield,.....	1 00
Best plums, A. Mench,.....	1 00
Best and greatest variety grapes, A. F. Gaylord,..	1 00
2d best do., C. T. Gorham,.....	50
Best specimen grapes, G. Beardsley,.....	1 00
2d best do., Mrs. L. T. Haskell,.....	50
Best 5 quinces, G. Beardsley,.....	1 00
2d best do., G. G. Collins,.....	50

All the fruit exhibited was very good, better than the committee have ever seen at any fair, and the committee regret that the rules did not allow them to grant more premiums.

The fig-tree presented by Miss Sabra Soule was a fine specimen of a tree, with fruit on it, which attracted much attention.

W. P. PENNIMAN,
CHAS. MERRITT,
S. H. BUNKER,
A. F. GAYLORD,
Committee.

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FLOWERS.

Greatest variety wild flowers, Miss M. Pearl,.....	$1 00
2d best do., Mrs. Jer. Brown,.....	50
Best and greatest do., Mrs. J. H. Montgomery,....	1 00
2d best do., Mrs. Jer. Brown,.....	50
Best seedling Verbena, "	50
Best do., Phlox, "	50
Best do., Petunia, Mrs. J. H. Montgomery,.....	50
Best and greatest variety dahlias, Mrs. Jer. Brown,	1 00
Best twelve dahlias, Mrs. Jer. Brown,.....	1 00
2d best do., Mrs. E. Rathbone, ...	50
Best single dahlia, plain, "	50
Best do., variegated, Mrs. Jer. Brown,..... ..	50

Best and greatest variety Verbenas, Mrs. J. H. Montgomery,	$1 00
2d best do., Mrs. Jer. Brown,	50
Best do., Phloxes, Mrs. J. H. Montgomery,	1 00
2d best do., Mrs. Jer. Brown,	50
Best do., Petunias, Mrs. J. H. Montgomery,	1 00
2d best do., Mrs. Jer. Brown,	50
Best and greatest variety violets, Mrs. Jer. Brown,	75
Best single Rose Souvenir de la Malmaison, Mrs. E. H. Lawrence,	50
Best basket flowers, Mrs. E. A. Lawrence,	1 00
2d best do.,	50
Best gladeolus, Mr. Jer. Brown,	50
Best hand bouquet, Mrs. E. H. Lawrence,	1 00
2d best do., Mrs. Jer. Brown,	50
Best floral design, Mrs. Jer. Brown,	1 00
2d best do., Mrs. R. E. Hall,	50

Committee unable to decide between Mrs. E. Rathbone and Mrs. Brown—recommend premiums to both.

Your committee cannot omit adverting to the beauty and excellence of the large variety of flowers submitted, and to the surpassing grace displayed in their combination and arrangement, by the ladies of the county. A large and fine variety of flowers from the parterres of the Union School in the city, attracted especial attention, as well as several novelties in the floral world, not entered for premiums. We would recommend a special premium for No. 512, being a very fine pyramid, and also to No. 84, being a splendid specimen of the Canary Bird flower.

GEORGE JOHNSON,
STEPHEN BLACKHURST,
MRS. MILO SOULE,
MISS CHURCHILL,
Judges.

FINE ARTS.

The Committee on Fine Arts report as follows:

Best oil painting, Henry Seymour,	$ 2 00
do water color, Monte. Woodruff,	2 00
do five ambrotypes, H. E. Dunham,	2 00
do pencil drawing, Monte. Woodruff,	2 00
2d do., Miss Emma Ingersoll,	1 00

The committee found quite a number of articles in this department, which, though not belonging strictly to the fine arts, yet exhibited a high degree of taste. They would recommend for a discretionary premium—

An aquarium, Wm. Elston; a herbarium, F. Woodruff.

A drawing of beveled wheels, by George Johnson, not entered for a premium, but on exhibition, was particularly admirable, being almost perfect in its execution.

A set of dental instruments, H. Eggleston, and a miniature steam engine, Mr. Cawood, displayed a very high degree of mechanical ingenuity, skill and taste, and the committee recommend them for a premium, lest they should be overlooked by the judges of the department to which they belong.

J. B. GREENOUGH,
Chairman Committee.

FARM IMPLEMENTS.

The committee on Farm Implements respectfully report, they regret that so few articles were on exhibition. Out of the meagre list exhibited, they have awarded the following prizes:

Best farm wagon, Adams & Smith,	$ 3 00
2d best do., " "	2 00
Best sub-soil plow, Burnham & Co.,	2 00
Best harrow, C. Miller,	2 00
Best horse rake, "	1 00

Best straw cutter, Jason Lusk,..... $1 00
Best set horse shoes, C. Cooley,..... 50
Best lb. horse shoe nails, " 50
Best grain cradle, W. H. Kerr,..... 50
Best 3 axe-helves, H. A. Seymour,..... 50
Best churn, Peter Hall,..... 50

There was a fine exhibition of Curtis Plows from Bellevue, which by the rules of the Society were not allowed to compete.

WM. R. SCHUYLER,
JOHN PEARL,
ELIAS NEWBRE,
C. M. BARDWELL,
Judges.

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DOMESTIC MANUFACTURES, NO. 1.

The committee report that those who presented barrels of flour made no statement, therefore they were unable to award premiums.

Best 2 seated carriage, Adams & Smith,.....$ 3 00
2d best do., " " 2 00
Best bee-hive, R. B. Merritt,..... 50
Best box honey, S. P. Womley,..... 50
Best flour barrel, James Winters,..... 50

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DOMESTIC MANUFACTURES, NO. 2.

Best 10 yards full cloth, Mrs. Wm. Gregg,..... $1 00
do. flannel, Mrs. J. Woolsey,..... 1 00
Best rag carpet, Mrs. G. Beardslee,..... 1 00
do. colored stocking yarn, Mrs. J. Woolsey,..... 75
2d best do., Miss M. A. Lansing,..... 50
Best white stocking yarn, Mrs. J. Woolsey,..... 75
2d best do., Mrs. M. Lansing,..... 50
Best pair wool stockings, Mrs. S. Ladd,..... 50

Best pair wool socks, Mrs. Thos. Chisholm,..... $0 50
do. wool comforter, Mrs. M. Lansing,..... 50
do. pair cotton stockins, Miss E. Lansing,..... 50
do. pair fringe mittens, Miss M. A. Lansing,..... 50
do. pair fringe gloves, Mrs. M. Lansing,..... 50
do. pair wool knit mittens, Miss M. Furlong,..... 50
do. pair buckskin gloves, N. H. & H. C. Potter,.... 50
do. made shirt, Miss S. Jones, ... 50
do. specimen plain sewing, Mrs. S. Ladd,..... 50
do. sample embroidery, Miss M. J. Wells..... 75
2d best do., Miss Ann Wilder,..... 50
Best worsted work, Miss Nancy Ann Cool,..... 75
2d best do., Miss S. Jones, ... 50
Best crochet work, do., ... 50
2d best do. do., ... 50
Ornamental hair work, Mrs. B. Leclare,.....Dis'ry.
Best bed-spread, Mrs. E. Jones, ... 75
do. quilt, Miss M. Furlong,..... 75
2d best do., Miss C. Newbre,..... 50
Best bed coverlet, Miss M. Lansing,..... 75
2d best do., L. Williams,..... 50
Best wool blankets, Mrs. G. Beardslee,..... 75
do. jar currant jelly, Mrs. J. A. Clemons,..... 50
do. jar pickled tomatoes, Mrs. Z. Tillotson,..... 50
do. and greatest variety of pickles, Mrs. P. B. Goodell 1 00
2d best do., Mrs. J. Pearl,..... 50
Best bottle tomatoe catsup, Mrs. Z. Tillotson,..... 50
do. grape wine, Wm. H. Kerr, ... 50
do. red currant wine, Mrs. G. Beardslee,... 50
do. white currant wine, Wm. H. Kerr,.... 50
Best sample maple sugar, do., ... 50
do. soft soap, Miss E. L. Lansing,..... 50
Jar pickled peaches, Mrs. J. A. Clemons,.....Dis'ry.
do. pears, Miss Kate Gordon,.....Dis'ry.
do. Nasturtions, Mrs. G. Beardslee,.....Dis'ry.

BOOTS, SHOES, AND HARNESS.

Only one article entered.

Best single harness, E. R. Mills,..... $2 00

POULTRY.

Best pair geese, Jos. Ames,.....	$1 00
do. turkeys, Mrs. O. C. Comstock, jr.,.....	1 00
do. pair ducks, W. R. Schuyler,.....	1 00
2d best do., H. G. Hamilton,.....	50
do. Cochin China chickens, W. R. Schuyler,	1 00
2d best do., W. R. Schuyler,.....	50
Best pair dorkings, do., ...	1 00
2d best do. do., ...	50
Best pair dominico, Mont. Woodruff, ...	1 00
do. bantams, R. J. Emory,.....	1 00
2d best do., A. H. Gordon,.....	50
Best pair brama pootra, S. P. Wormley,.....	1 00
do. cross breed, Andrew Morton,.....	1 00
2d best do. do., ...	50
Best pair games, Wm. Dunn,.....	1 00
do. Hamburg, H. A. Pierce,.....	1 00
2d best do., L. Diver,.....	75
Best pair silver pheasants, M. E. Morgan,.....	1 00

MISCELLANEOUS ARTICLES.

The committee report the following articles worthy of discretionary premiums:

Skeleton buggy, by P. H. Barnes.

Well pump, by P. Kocher.

Sulky, by P. H. Barnes.

Machine for improving roads, N. Potter.

Wool box, by C. Hanchett.

Patent brace and bitt, by N. Potter.

Can Wilson's seedling strawberries, A. Hadden.

The following foreign articles were entered:

Threshing machine, and power Champion machine by John Ansley.

Thresher and huller, clover machine combined.

Sawing machine, Lowell Hulett.

Reaper and mower, E. T. Gregg.

Sugar evaporator, W. H. Kerr.

Beckwith & Gay's corn-planter, H. S. Benham.

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EQUESTRIANISM.

The committee on equestrianism report as follows:

Best rider, boy under 15 years, Master Coleman,...	$5 00
2d best do., Eugene Dixon,.....	3 00
3d best do., Master Hyde,.....	2 00
Best rider, lady, Miss Wing,.....	5 00
2d best do., Miss Frink,.....	3 00
3d best do., Miss Downs.....	2 00

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FARMS AND GARDENS.

The committee on farms and gardens report that they have viewed the farm of Thomas Chisholm, in Marengo, and were well pleased with his method of management. The farm seemed to be judiciously cultivated by the mixed system of husbandry. Mr. Chisholm keeping a sufficient quantity of stock to furnish quite a quantity of barn-yard manure, increased by a liberal litter of straw, which, together with a free use of clover, enables him by a good system of alternation of crops, to keep his soil fertile and in a condition by good farming and prudent management, to produce remunerating crops.

The stubbles and other fields at the time viewed by us presented a clean and smooth surface, free of stone and stumps, with only an isolated tree left standing here and there for shade. Upon the three hundred acres under culti-

vation, there were no obstructions to the mower or reaper, if deemed necessary to use them. The soil being a sandy loam for the most part, such as is found to prevail upon our oak openings, and naturally fertile, the desire of the owner by his system of culture, seems to be to add annually to its fertility, rather than exhaust it by the depleting process; and in so doing, remunerating crops are obtained; and if Mr. Chisholm is not to be regarded as the most nice and particular farmer in the county, he has been successful and generally produces good crops, always bringing a good article of wheat to the market.

Good fences make good neighbors, and enable the farmer when he retires to bed at night, to awake in the morning conscious that his crops are secure, and that the labor of weeks are not destroyed in an hour by his neighbor's or his own stock. Mr. Chisholm can rest safe on this score, for we noticed that he had been to no small expense in the erection of sustantial fences.

A good house-wife is a very essential appendage to a good farm, and Mr. C isholm has been fortunate in this respect, and a good share of his success in farming may be traced to the in-door arrangements as well as to those in the field.

We regret that others had not entered their farms so as to enable us to institute a comparison, and decide upon the relative merits of competing farms; but as the farm of Mr. Chisholm is the only one entered for a premium, we think the management of Mr. Chisholm worthy of encouragement; and although his statement accompanying this report is not as full and particular as we could wish, yet we feel justified in awarding him the silver cup.

We further report that we have viewed the gardens of Benj. Johnson Dibble and Joseph Ames.

We found Dibble's garden tastefully and conveniently laid out into walks and beds, kept free of weeds, and admirably well cultivated, constituting an ornament as well as a luxu-

ry to the city residence. Abounding in grapes judiciously pruned, and in a large supply of small fruits, such as currants, raspberries and strawberries in their season. We noticed a few choice fruit trees of the pear and apple, which had received the careful attention of the cultivator. The asparagus and celery beds were ample, and all the vegetables raised seemed to be good and amply sufficient for family use. We therefore award to Ben. Johnson Dibble, the first premium on gardens, and to Joseph Ames the second premium.

The garden of Ames was upon a fertile soil, kept free of weeds, and one of the leading products was that of tobacco; about half a ton of tobacco was raised this year upon a small part of the garden.

Horticulture as well as farming is receiving increased attention, and there is nothing about a farmer's dwelling that administers more to his comfort and pleasure than a good garden.

S. H. PRESTON,
MILO SOULE,
ALEX. GORDON.

Statement of Mr. Chisholm.

I, Thomas Chisholm, being duly sworn, depose and furnish the following statement, under oath, in regard to my farm in the township of Marengo, to wit:

The farm consists of about 449 acres, situate on the old Territorial road, and extending south of said road one mile on each side of a north and south road; about 300 acres of which are under improvement, and the balance is wood-land and marsh, the timber oak-openings. The number of acres of wheat harvested this year was about 90 acres. The varieties of wheat raised were the Soules, the blue-stem, Mediterranean, Nantucket, Golden chaff, and the Amber, a new variety introduced into this vicinity by Morrison, of Albion, from Southern Illinois. The Soules

and blue-stem did the best, and in my opinion are the safest and best variety yet raised among us. As I have not threshed my entire crop, I am unable to state the amount raised by me. It is believed the yield will average from 15 to 25 bushels per acre. The blue-stem yielded the best per acre, and was uninjured by the frost, the other kinds being more or less injured by the unusual frost. The number of acres put into wheat this fall is about 70 acres, and 50 on the old Phelps farm. The sowing is done by drill, using one and a half bushels of seed per acre. I have generally had the best success in raising wheat by plowing under a clover lea, 8 or 10 inches deep, immediately after haavest in July, and then using the cultivator and drag, and seldom plow but once, keeping the soil well pulver zed and clean until seed time, from the 5th to the 15th of September. In the alternation of crops I generally let the land remain seeded to clover about 3 years.

I prefer a clover sod for corn, and as a general thing haul my manure on to the sod in the fall and plow it under in the fall, and cultivate it in the spring, exposing it to the action of the atmosphere, and after planting I keep the cultivator in it as soon as the rows are discernible. I prefer the white dent and smut-nose flint. I generally raise from 40 to 50 acres of corn annually, and get from 40 to 50 bushels to the acre.

I generally raise from 2 to 3 acres of potatoes. The varieties this year are the Neshanock and California. I generally raise from 30 to 40 acres of oats, and the usual yield is from 40 to 50 bushels to the acre. I usually sow about three acres of spring rye for horse feed. I have not had very good success in raising spring barley, and have abandoned raising it.

The stock now on my farm consists of about one hundred and fifty sheep, about 30 head neat cattle, 18 horses, including breeding mares and colts, and about 30 swine.

My family expenses are considerable, and likewise my

expenses for hired help. The annual net profits are from ten to fifteen hundred dollars. My expenses for a year or two have been increased by the making of new and additional fences, both board and rail fence, and in making permanent improvements to the farm generally.

The nature of the soil, as a general thing, is a sandy loam, with occasional spots inclining to clay, free of stone as a general thing. I prefer the sandy soil to the clay for wheat and corn and for most crops, as it stands the drought better and is more easily cultivated.

THOS. CHISHOLM.

Subscribed and sworn before me, this 27th Sept., 1859.

STEPHEN H. PRESTON,
Notary Public.

ADDRESS

Delivered before the Calhoun County Agricultural Society, held at Marshall, September 29th and 30th, and October 1, 1859, by Stephen H. Preston, Esq.

Mr. President and Fellow-Citizens:

In holding the Eleventh Annual Fair, since your permanent organization, which is co-extensive with that of the State Agricultural Society, the progressive improvement here displayed cannot be otherwise than highly gratifying to your pride.

The first State Agricultural Fair in New York, was held in Syracuse, in 1841. Previously, in that State, county fairs had been held. The sagacious mind of De Witt Clinton early discovered the advantages likely to accrue to the agriculture and manufacturing interest of the Empire State through the organization of these societies and through his executive influence, legislative aid was obtained, and by the award of premiums, a desire to excel in the productions of the soil, and in the improvement of stock, was wisely disseminated. His grasping and far-see-

ing mind, looking upon the old map of the country, was the first to predict that Fort Dearborn (Chicago,) would at some future time become an important city. His anticipations have been more than realized, for it is already the greatest grain market in the world. Our grand system of railroads had not then been projected, canals were the medium of communication relied upon for developing the resources of the country.

The first cattle show in the United States was held at Pittsfield, Berkshire county, in the State of Massachusetts, 1st October, 1810.

That county was also the first to inaugurate a festival of the re-union of its distinguished sons who had wandered and settled in the different sections of our extensive country.

Thirty years hence, a short period in the history of nations, but longer than the present settlement of this county, such a re-gathering of the natives of this county will call up pleasing recollections of the past.

The youths of the present day, and those as yet unborn, who may have found homes upon the shores of the Pacific, as we are a migrating people, will to participate in such a festival, re-visit old Calhoun. Each returning wanderer, as he crosses the threshold of the old domicile, may be heard to exclaim in the language of the poet—

"I never left the place that knew me,
And may never know me more,
Where the cords of kindness drew me,
And have gladdened me of yore;
But my secret soul has smarted,
With a feeling full of gloom,
For the days that are departed,
And the place I called my home.
I am not of those who wander,
Unaffectioned here and there,
But my heart must still be fonder,
Of my sites of joy or care;
And I point sad Memory's finger,
(Though my faithless foot may roam)
Where I've most loved to linger
In the place I called my home."

Again will he recline under the shadows of the old trees which adorn the ancestral home, wondering at their growth, and recalling the time when by his own hands they were set out. Again will he seek the choice fruit of the old orchard; drink at the same pure fountain where, in his halcyon days, he was wont to quench his thrist; perambulate the old fields, admiring the progress of improvement that meets his gaze on every hand. Those fields, instead of being worn out and over-ran with noxious weeds, will have been increased in fertility by the improved system of husbandry, by a judicious rotation of crops, and the repeated application of manure; the side of the highways will have been adorned by native shade trees of the oak, the hickory, the maple and the elm; the hydraulic power of the country will have been improved to its capacity by the erection of woolen and other manufacturing establishments. Shall not this be so? Farmers of Calhoun! the responsibility rests with you; and now is the time to commence the work of renovating your soils; to plant those shade trees by the road side and around your dwellings, to invite capital into the State by wise legislation, and foster by liberal laws all those great interests which add to the wealth of a people. You are annually sending to market over your railroads thousands of barrels of flour, and in every barrel of flour a portion of your *soil*. If this depletion is continued, and nothing is returned to that soil for the exhaustion constantly made by your drafts, your lands in a few years will present the same sterile appearance of those of old Virginia. You already begin to complain of the failure of your wheat crop—that you cannot raise on an average more than fifteen bushels to the acre, and scarcely that amount; whereas, your soil should be made capable of producing from thirty to forty bushels to the acre. Sixty bushels is frequently raised in England to the acre, upon that soil that has been tilled for centuries. Your climate is more favorable than theirs, unless certain

fertilizing properties are derived from their atmosphere, influenced by the ocean.

It has been estimated that a single crop of thirty-five bushels of wheat, taken from an acre of ground, with two tons of straw, extracts from the soil at the same time 277 lbs. of mineral substances, in the following proportion: silica, 170 lbs.; potash, 40 lbs.; phosphoric acid, 30 lbs.; lime, 16 lbs.; magnesia, 10 lbs.; sulphuric acid, 8 lbs., and soda, 3 lbs.

R. F. Johnstone, editor of the Michigan Farmer, says truly, that "ten crops of the same grain would carry off a ton of these valuable minerals from each acre; while, according to the usual plan of cultivation, not a pound would have been added to it, and no effort having been made by increasing the depth of the soil, or otherwise, to make up the loss, by putting it in a condition to be acted upon by the elements—is it strange that we so often hear of farms which once produced thirty or forty bushels of wheat per acre, being now worn out, and their possessors moving away in search of new land, to which the depleting process has not yet been applied, but which they are quite competent to commence and carry on, *ad infinitum*."

Chemical analysis of wheat informs us that silica predominates in the straw; that potash and phosphoric acid exists in very large quantities in the berry, and that lime is found both in the straw and the grain. The question naturally arises, "What constitutes our best wheat soil? What are the best manures? How should they be applied? What method of cultivation should be adopted to renovate the soil and enable it to produce the greatest yield of wheat?

This leading staple of commerce always commands cash in the markets of the world. Its value fluctuates like all other commodities. The wheat harvest is annually regarded with fearful anxiety by all classes. Its failure, more than any other productions, affects the prices of other com-

modities, and frequently deranges the currency. Although wheat is produced in almost every latitude except in the immediate neighborhood of the tropics, yet experience supports the painful fact that good wheat producing soils are yearly diminishing. Winter wheat is now seldom attempted to be raised in any quantity east of Onondaga county, in the State of New York, where formerly large crops were obtained. The quantity raised in the famous Genesee region, with all their judicious tillage, is annually decreasing. A large portion of Illinois, Iowa and Wisconsin, are found to be ill adapted to the successful culture of winter wheat.

Consequently, without any foreign demand, taking into consideration our rapid increase in population, and the narrow breadth of soil devoted to wheat culture, can there be much doubt but what this important staple will continue to command remunerative prices? The crop of last year was exhausted before harvest. Scarcely ever were the grain markets so destitute of flour as at the present harvest, and although the wheat is of superior quality, it is doubtful whether an average yield per acre has been obtained. As farmers are generally able to hold their wheat, it seems to us the increasing demand for home consumption must increase the price. Few farmers are willing to sell their wheat less than one dollar per bushel. With the increased facilities of getting it to market, one dollar per bushel can be as well paid now as 75 cents before the construction of the railroad. All writers on agriculture have mentioned clay soils as the best adapted to the culture of wheat. Is this true? Silica, one of the most important ingredients entering into the straw of wheat, is derived from the Latin word *silex*, meaning flint. In agricultural chemistry, silica is synonymous with sand. Hence our sandy soils and gravelly l ams, abounding in silica should be better adapted to wheat than argillaceous soils. Our oak openings, as a general thing, abound in a

sandy soil. So far as my observation extends, wheat is generally better on the openings than on lands heavily timbered with beech and maple, as the latter is more inclined to clay. It is very questionable whether the prairie or even the burr-oak soils will constitute as durable land for wheat as the white-oak. They do not seem to contain as much sand or silica, notwithstanding they have as yet proved to be our most productive soils. This is probably owing to the great quantity of humus found in them. While they are better adapted to the production of corn, we are unwilling to denominate them as the most durable wheat soils. The white-openings predominate in this county, consequently, you have one of the best natural soils for the production ot wheat. You can add to their natural fertility by the application of such manures as contain the ingredients found by chemical analysis to be requisite for wheat. By keeping stock and returning the straw to the land in the shape of barnyard manure, the quantity of silica can be kept good and even increased. So far as any chemical analysis of our sandy soils, has come under my observation, they have been found to be deficient in potash, one of the most important ingredients entering into the berry of wheat. Save your ashes, and apply them to your lands. You must have frequently noticed in putting a new piece of ground into wheat, that wherever a log heap has been burned, the wheat is always better upon that spot than any other portion of the field. Bone dust abounds in phosphoric acid, and is a valuable top-dressing in wheat. Lime imparts vigor to the straw and grain. A large quantity of lime is contained in leached ashes, hence they should be liberally used, when obtainable. Some have doubted whether the application of plaster materially benefitted wheat. From the sulphuric acid contained in plaster, there can be no doubt but what its use imparts a benefit, although it is not as great and perceptible as when applied to clover.

If all the mineral substances entering into the composition of wheat cannot be obtained and returned to the soil, you can save and add materially to the quantity of your barnyard manure by composting with muck and vegetable moulds. It is believed the marshes will prove to be our most valuable lands, when properly drained, constituting good meadows and affording an inexhaustible supply of muck, abounding in marl and decayed vegetable substances, which when exposed to the atmosphere a few months and incorporated with our sandy soils, must necessarily greatly add to their fertility. If so, nature has bountifully supplied us with inexhaustible manure beds more durable and valuable than the guano islands of foreign lands.

Muck exerts a beneficial influence upon vegetation, because it loosens the soil by the development of carbonic acid, and possesses the power of attracting water from the air, and of retaining it for a long time, and by means of the acids contained in it, it is able to extract ammonia from the atmosphere, and also from manure, when composted with it.

Simon Brown, of Concord, Massachusetts, who has had much experience in the use of muck, says "there is no danger of error in regard to the quantity of ashes mingled with muck, only that in most cases it will be likely to be too small. About 103 bushels of muck make a cord; and if to this could be added five bushels of unleached ashes, and 12 loads of about 34 bushels each, were to be applied to an acre, the effect would be plainly perceptible on any crop in a favorable season.

With such a dressing as this, and what manures could be spared from the barn, together with a thorough system of cultivation, even the poorest lands would soon produce permanently remunerative crops; and once in this condition, it is an easy matter to keep them so. Another merit of this great gift of Nature is that it not only retains its good qualities within itself, though exposed to the elements, but possesses the wonderful power of tempering

all other soils and bringing them into activity, sometimes by its attractions from the atmosphere, or by yielding up its own virtues to the roots which freely traverse it, and again by the mechanical influences it exerts upon the whole mass, where it is introduced. When, therefore, muck is applied to stiff, clayey lands, it still produces those desired results which enable the farmer to cultivate them with pleasure and profit. The first operation on clayey lands, however, must be thorough drainage; for it is time and money wasted to attempt their amelioration with anything so long as cold spring water is permitted to run over the surface, or to stand permanently a few inches below it. Muck should be dug and exposed to the action of frost, sun and rain, so that its particles will easily crumble to pieces, before it is applied to the soil. As to the quantity of muck to be applied to the acre, this depends so much upon the circumstances of each acre, that no definite rule can be laid down as a guide."

The ladies, who add interest to these exhibitions by their fine display of flowers, are more or less in the habit of using muck around their roses, plants, strawberry and flower-beds, and will sustain Mr. Brown in his estimate of the virtues of this inestimable fertilizer. Aside from the use of muck, you have another valuable fertilizer, of which you generally avail yourselves—clover. You have, to a certain extent, dispensed with the naked fallow, and usually plow under a clover lea for a wheat crop. When clover is plowed under, the ground should be kept free of weeds and grass by the subsequent use of the gang-plow or wheel cultivator until seeded.

It may not always be convenient to turn under a clover sod for wheat, but in cultivating the fallow, deep plowing and a thorough pulverization of the soil, bringing up new mineral substances, and exposing the soil to the action of the atmosphere, should not be neglected.

The system of tillage inculcated by Jethro Tull more

than a century ago, was the naked fallow, frequent plowing, and a thorough pulverization of the soil to a great depth, so as to permit the roots of wheat and other plants to penetrate the soil to such a depth as their nature demanded. He, however, before his death, was forced to admit that a constant succession of the same crop could not be advantageously produced on the same soil by merely deep plowing and thoroughly pulverizing it without the application of manure, without returning something to the soil to replenish the exhaustion. Modern husbandry has demonstrated that a judicious rotation of crops, and the application of animal, mineral or vegetable manure, such and in such quantities as the nature of the soil, and the chemical analysis of the plants require, can alone increase and preserve the fertility of the soil.

Too much care cannot be taken in selecting clean and the best variety of seed. As long as white wheat brings 15 cents per bushel more than Mediterranean, and as a general thing yields more to the acre, is it good policy to abandon the Soules, the blue-stem, the Hutchinson and flint, noted varieties of white wheat, unless compelled by the midge or Hessian fly?

With more caution in selecting a choice variety of some of the white wheat, and by brining and rolling the seed in lime, it is believed they can continue to be successfully raised. We have not as yet been seriously troubled in this county with the midge, sometimes erroneously called the weevil, a small insect, that makes its depredations in the head of the wheat before it is fully ripe. We have our advocates of thick and thin sowing, of the broadcast and drill method. One and a half bushels is the medium quantity usually sowed in Michigan. When we take into consideration the injury inflicted upon the germinating properties of many of the kernels by the threshing machine and the ravages of the insects, it seems to us that

less than this quantity should not in no instance be sowed to the acre.

The Egyptians, who early cultivated wheat, obtained large yields. The soil was annually renovated by the overflowing of the Nile. More than a thousand years before the Christian era, it is to be inferred from the 27th chapter and 7th verse of Ezekiel, that different varieties existed, and interchanges of seed were made, for it is stated that "Judah traded in wheat of Minninth."

By some, winter wheat is said not to exist in a wild state, and a French botanist has lately discovered that wheat can be produced by the careful cultivation of a grass called Egilops, found growing wild upon the coast of the Mediterranean sea. By others, from the passages in the 3d chapter, 19th verse of Genesis, "In the sweat of thy brow shalt thou eat bread," and 3d chapter, 19th verse, "And he (Lot) made them a feast, and did bake unleavened bread, and they did eat," it is inferred that it was coeval with creation.

Columella and Pliny, Roman writers, describe the various varieties of wheat existing in their times. If we are indebted to the old world for the introduction of wheat, the debt may be considered cancelled by our furnishing them with the potato, maize and tobacco plants. These plants were indigenous to the soil of the new world, and were first introduced to the notice of Europe by Sir Walter Raleigh, who found them growing wild and cultivated by the aborigines of this country.

Farmers of Calhoun, you are bountifully blessed with a genial climate and fertile soil, with institutions of learning, and laws of your own making. You are bound by no feudal tenure. By no law of primogeniture does the eldest son inherit your landed possessions. Intestates are distributed equally among the heirs-at-law. You have wisely provided by the revised constitution that no lease or grant, hereafter, of agricultural land for a longer period than twelve

years, reserving any rent or service of any kind, shall be valid. By the same organic law, the personal property of every resident of the State, to be designated by law to the amount of not less than five hundred dollars, shall be exempted from sale on execution or any other process of any court issued for collection of any debt contracted since the adoption of the constitution, and every homestead of not more than forty acres of land, and the dwelling house thereon, not exceeding in value fifteen hundred dollars, is likewise exempt.

These exemption laws have been found to inure as much to the interest of the commercial man as to the benefit of the farmer. The credit system has been lessened, and is no longer an incubus pressing you down. Your crops are no longer mortgaged in advance to the merchant. Ready-pay is the new order of things, and you buy where you can purchase the cheapest, acting upon the principle that *there is no friendship in trade.* So, entirely independent, there is no reason why you should continue to place yourselves at the mercy of the brokers. Your wool clip has been purchased with the bills of Eastern specie-paying banks, placed in the hands of their agents, and by them deposited, in most instances, with brokers. How little Eastern money is now in circulation. As flour is sold in the markets of the Eastern States, your wheat, like your wool, should command the specie, or its equivalent. Our circulation at present is composed chiefly of bills on the banks of Wisconsin and Illinois; you are told that the circulation of these banks are secured by the deposit of State Stocks. These stocks are more or less depreciated and fluctuating; and if there was in reality any certainty of the banks redeeming their bills in specie when presented, their location is inaccessible to you for all practical purposes, situate in some remote corner of a distant State, and kept, if there should happen to be any banking office, more than likely in some saw-mill. Who

ever heard of a bill holder of any of these Western banks obtaining the specie on the bills at the counter of the banking office? And by the law of Illinois, the banks are not obliged to pay specie under ten days after presentation; if they then refuse, the bill-holder is compelled to resort to a tedious process of collection. If a bank fails, you must submit to the loss, and take whatever the banker is willing to give you for this irresponsible, and to a great extent, worthless currency. The Michigan Central Railroad refuse to take it for freight,—except the bills of the State Stock Bank, which, by special arrangement, I understand are received at this depot for the present,—and the Board of Trade of Detroit have repudiated it to a certain extent. And why should you continue to receive it for your produce? Let us all refuse to take a dollar of it, and it will soon disappear from our midst, and its circulation be supplied with a sound specie-paying currency. The rate of exchange on New York is conclusive evidence of its depreciation, and that it is not such a currency as the farmer wants to put in his pocket and sleep on over night. *Bought wit is the best if not paid for too dear.* From your experience with the wild cat banks and those of the State of Indiana, the latter purporting, like the Western bills now in circulation, to be secured by State Stocks, we should think you had been taught a sufficient lesson to dispense with any caution from us, and on an occasion like the present.

The laborer is worthy of his hire, and the product of labor should be exchanged for a fair equivalent. Labor is the source of wealth, and whether regarded as manual, physical, mental, animal or mechanical, is the basis of all prosperity and improvement.

You have an important mission to fulfill; occupying a leading position in society, and engaged in the highest and most important of all pursuits, the manufacturing and commercial interests are dependent on you.

As you prosper, so flourish all other interests. With this vast responsibility resting upon your efforts as a class in the community, it behooves you to push on in the glorious work of improvement. The agricultural progress made in this county since its first settlement, in April 1831, is truly astonishing, and can only be partially appreciated by the fine display here exhibited of your cereal, vegetable and fruit products, by the display of your animals of the most desirable breeds, and your agricultural implements.

To fully appreciate that progress, one needs to traverse the entire county and behold the log cabin removed for the neat and comfortable dwelling, the barns and out-buildings filled with the products of the farm, the extensive enclosures, requiring miles upon miles of fences,—the orchard loaded with fruit, the removal of the stumps and stones, so as to use those great labor-saving machines—the mower and reaper. As there are a number of patents of these machines, you will be importuned by the agent of each to buy his machine. You may have witnessed a trial of some of the different machines, and therefore are enabled to judge for yourselves which machine suits you best. If I was to express an opinion as to the best combined machine, I should prefer the Ohio Mower and Reaper, manufactured by by E. Ball, of Canton, Ohio.

These annual Fairs have become general, and are to be regarded as among the fixed institutions of our land, recognized by law and sustained by individual generosity, as well as by taxation.

The amount, however, each county is authorized by law to raise, being not less than one-fortieth nor more than one-tenth of one mill on the dollar on the assessment roll of the county, would be of little avail towards sustaining the prosperity of these societies, were individual enterprise and liberality withheld. Judges may err in awarding premiums, articles of decided merit may be overlooked,

partiality in favor of the owner, when known, may be exhibited by the committee, and exert a bad influence, dissatisfying worthy competitors. All cause of censure should, if there ever was any, cease to exist. An exhibitor may be disappointed in not receiving a premium, for the very good reason that his neighbor excelled him. This, rather than being a cause of dissatisfaction, should stimulate him to endeavor to excel his neighbor the next year.

The Greeks had their Olympic games, and the Romans their Saturnalian festivals. Warlike in their disposition, the genius of the ancients exhibits itself in chanting the praises of their heroes. We, as a nation, delight in the arts of peace, rather than in the fortunes of war. These exhibitions of industry tend to form our national character. Their utility consists in not only exerting an honest zeal to excel in everything useful or ornamental that may contribute to our comforts, our pleasures, or tastes, creating a worthy spirit of emulation, and aiding in developing our resources, they give a tone and character to society.

The historian, in writing the history of this country, in tracing its progress in agriculture, in manufactures and commerce, and noticing the amusements of the people, cannot well overlook the important bearing these festivals have on these branches of industry.

The most conspicuous chapter in the history of Victoria, whose domestic virtues add lustre to her reign and constitute her one of the brightest ornaments of her sex, is that of the WORLD'S FAIR. That grand panorama of the industry of all nations, where the inventive genius and skill of the artisan of every clime were exhibited, showing the progressive improvement since Tubal Cain, the first artificer in brass and iron, had, and is even yet exerting an influence more beneficial in its effects than any other event in her illustrious reign. During the exhibition the cohorts of Mars were driven away by Ceres and Minerva and their attendants of industry and wisdom. What a contrast does

that Crystal Palace, filled with emblems of peace and industry, present to the old time-worn Tower, that relic of tyrrany, treachery and oppression, converted from a prison into an armory; it contains, beside the regalia of the British crown, the arms of the various kings, nobles, generals and admirals who have carried the standard of St. George around the globe. In gazing upon the trophies of war and various implements of destruction used by the many conquered nations, there exhibited, we are reminded of the pride—of the rise and fall of the Roman Empire.

An American, as he looks upon the scene and contemplates the power of the British government, upon whose possessions the sun never sets, has no sad recollections, no memory's tear to shed, for the American Eagle and Stars and Stripes are not among the trophies, and never will be, so long as they are guarded by an independent yeomanry. Let us leave the Tower, with all its sad recollections and mournful tales, and re-enter the Crystal Palace, for in so doing we have a little Western pride.

The vast multitude, composed of all nations and speaking the various languages, are busy treading the various avenues and occasionally stopping before the different apartments allotted to each nation, to admire some rare specimen of sculpture or statuary, some choice painting, or the exquisite fabrics of woolen and silk manufacture, or some beautiful and costly article, enriched by the embroidery and needle-work of the delicate female hand; or it may be the diamonds and precious stones of the lapidary, or the curious workmanship of the jeweller excites and rivets their attention, until the mind becomes satiated with the beauties, the splendor and excellence of the works of art, and longs for things useful rather than ornamental.

The gold medals, the highest rewards of merit to be distributed, were few, and only to be awarded to such persons as exhibited articles of decided merit, of great public utility, or of rare ingenious workmanship. When it is

recollected that of all the articles exhibited by the citizens of the United States, only two of our citizens received that medal, you can the better judge how sparingly they were awarded.

At this juncture in the progress of the exhibition, when the public mind was satiated with the masterly skill of the artist and costly fabrics of the loom, McCormick, of Illinois, brought forward his Reaper, and putting it to a thorough trial in the harvest fields of Old England, where nothing but the sickle and cradle had for centuries been used, the shouts of triumphant success as they went up from the assembled thousands, showed plainly that the public mind was satisfied, that the World's Fair had not proved a failure, that something useful, of decided merit had been found. That was a proud day for America. The nations of the world had now found something to fill up the vacant space allotted to the United States.

The other gold medal was received by the late Mr. Burt, a citizen of Michigan, for his solar compass. The construction of a compass so adjusted as to prevent the influence of mineral attraction upon the needle had long been a desideratum with scientific men. Accuracy of survey could not be made of land abounding in iron ore with the old compass. In attempting to survey the Upper Peninsula of this State, the defects of the old compass were made strikingly apparent.

While the mathematicians and savans of the Universities of the old world, as well as those of our own country, had been unable to remedy the defect, it was left to the humble genius of one of our own citizens to perfect that instrument, which is of great value and service to you, farmers, as upon the accuracy of survey depends the perfection of the boundary of your lands.

Necessity is said to be the mother of invention. The modern improved system of husbandry is in a great measure indebted to the many improvements in the implements of

agriculture. They have greatly facilitated the labor of the husbandman. One of the greatest labor-saving tools in the field was made by a New England farmer, and is said not to have been originally patented. The horse-rake could not now be dispensed with any more than the threshing machine, or the mower and reaper.

Of the numerous patents issued weekly from the Patent Office, few only stand out in bold relief, and are of great public utility. There are only a few inventions and discoveries in science that have, and continue to confer lasting benefit upon the human race, and mark the progress of the age. The inventors and discoverers have generally been men of humble origin, self-made and self-taught, and have not in their life-time derived much pecuniary aid compared with the inestimable benefits they have conferred on mankind. The world in its admiration of military glory and of the eloquence of the rostrum, is more apt to regard as great men, the conquering hero and the successful statesman, and overlook the merits of the ingenious mechanic and scientific men, who are the true benefactors of the human race. Columbus made known the New World to the Old; yet Columbus was treated with neglect, and was not permitted even the honor of giving his name to the continent he discovered, and how seldom is his name mentioned to that of Napoleon.

Galileo, only about two hundred years ago, exploded the false theory of the ancient astronomers, and revealed and explained the motion of the earth and the other planets around the sun.

Yet Galileo, in 1633, was cited before the Inquisition at Rome to answer to the charge of heresy and blasphemy for his scientific discoveries. Persecuted and subjected to torture, imprisoned, broken by age and infirmity, he at length yielded, and at the same time he was compelled by this Holy inquisition to renounce his theories, he is said to

have stamped his foot and whispered to a friend, "*yet it does move.*" Sir Isaac Newton subsequently confirmed the theory of Galileo, calculated the distances of the earth and other planets from the sun and from each other. It is said the simple fall of an apple from a tree, suggested a train of thought to the mind of this great philosopher, that unfolded to his intellect the laws of gravitation, and enabled him to perfect his system, or rather to explain the true laws which govern the Universe.

Lieutenant Maury, of the Smithsonian Institute, in his investigations of the laws which influence and govern the currents of the ocean, has done much for navigation and commerce. The meterological observations instituted throughout our extensive country, is doing much for the cause of agriculture.

Astronomy and science, however much they may have accomplished, have not as yet been able to entirely dispel the popular belief in lunar influences. The moon, like comets, is still by many supposed to preside over human maladies, and exert a variety of influences on the weather, on animals, the fishes of the sea, as well as upon organized nature. Each almanac is considered imperfect unless it is prefaced with a human skeleton, containing the signs of the zodiac, and popular delusion still persists in consulting that image to ascertain the proper time for sowing, planting, harvesting, felling timber, weaning animals, and even the Waltons of the rod tell us it is no use to engage in the sport of fishing unless the sign is right.

The extent of this prevalence in the belief of the influence of the moon, among all nations, induced M. Arago, of France, to make a series of observations, and note the different phases and changes of the moon for a series of years; and the result of his observations was, that there was no discoverable connection between the change of the moon and the vicissitudes of rain and drought to justify the popular belief. Dr. G. Emerson, of Philadelphia, likewise

by a series of observations, says: "As to the notion of lunar influence on disease, which still counts numerous partisans, I regard it as upon precisely the same footing as the exploded doctrine of the agency of the stars, so long and stoutly maintained." I look upon it clearly as demonstrable upon established philosopical principles,—First, that wet and dry weather are matters regulated solely by changes of temperature, over which the moon has no control. The rays of the moon have been concentrated by powerful lenses and the largest reflectors, and thrown upon that most delicate test of heat, the differential thermometer, without any indication of their effect in raising the temperature.

Secondly, That the mutual influence exerted between the earth and moon, as shown in the ocean and atmospheric tides, depends upon the play of another and entirely distinct principle, namely, *gravitation* or *attraction.*

Thirdly, That most, if not all of the effects upon animal and vegetable substances, popularly ascribed to the action of the moon, are to be traced to natural agencies entirely independent of this satellite.

Instead, therefore, of consulting the almanac to ascertain the change of the moon, so as to judge of the future state of the weather, let us provide ourselves with a thermometer and barometer—instruments based upon scientific principles. By law of Congress, or by order of the Secretary of the Navy, every national vessel is furnished with a barometer, and many a commander, on consulting the instrument, has been forewarned of the approach of storms, and thereby enabled to provide for the contingency by remaining in port, making harbor, or if at sea, by putting his ship in a condition to ride out the gale.

The discovery of the manner of the circulation of blood in the human system, by Harvey, and the use of the virus of cow-pox in vaccination, as a preventative of the small-pox by Jenner, accomplished much for materia medica.

If chemical science in the preparation of mineral and vegetable substances has accomplished much, and enabled the modern school of physicians more successfully to alleviate and cure the various diseases to which the human system is subject, chemistry has been equally essential in the analysis of soil and the products of the earth, thus enabling the scientific agriculturist to cultivate his land upon new principles.

We have heretofore remarked that of all the many inventions and discoveries, only a few have exerted a great and lasting benefit, and on the present occasion it may be excusable to allude to a few which suggest themselves as having produced wonderful changes, and materially tended to develop the resources and wealth of nations, or administered in an universal degree to our comfort and tastes.

The manufacturing interest of this country is of immense value. In the New England States it is the predominating interest; and in England it has grown to such a magnitude that if essentially interrupted or destroyed, it would affect the vitality of the nation itself. Yet it could never have attained its present importance had it not been for the invention of the spinning jenny and cotton gin.

Sir Richard Arkwright, the inventor of the spinning jenny, commenced life a poor barber. He first took out his patent in 1769; and instead of spending his time in fruitless endeavors to sell the use of his right to others, he erected a large manufacturing establishment, so that his property at Crawford Bridge, in 1792, the year of his death, amounted to at least £500,000.

Equally valuable was the invention of the cotton gin, in 1782, by Eli Whitney, of Massachusetts. Whitney visited Georgia for the purpose of teaching school, and while staying at the house of Mrs. Greene, widow of General Greene, of the Revolution, a few planters called at the

house on a visit to Mrs. Greene, and in the course of their conversation reference was made to the necessity of a machine for separating the seed from the cotton, that owing to Arkwright's invention of the spinning jenny, there was an increasing demand for cotton, but that it was useless to think of raising it for market if hand labor must be used in cleaning it from the seeds. Mrs. Greene informed them that there was an ingenious *Yankee* staying at her house and they had better consult him. Whitney, having a mechanical turn of mind, immediately set himself about the construction of the cotton gin. He received very little pecuniary aid from this great labor-saving machine, one machine performing that of a thousand hands, and in a much more perfect manner. It has increased the value of the lands of the Southern States more than fifty per cent., and has been worth more than a thousand million of dollars to the country in increasing the production of cotton. Yet no proud monument has ever been erected to the memory of Whitney, while the planter freely contributes to honor the memory of Calhoun by statuary. The cotton gin, however, is his best monument, and as it cannot be dispensed with, it is a silent memento on every plantation of his valuable services.

Robert Fulton, availing himself of the improvements made in the steam engine by Watt, was the first practically to propel vessels by steam. His first steamboat, placed upon the Hudson in 1807, made a progress of only five miles per hour. After the exclusive grant of the State of New York to Fulton and Livingston to navigate the Hudson by steamboats was set aside by the Supreme Court, Stevens, of New York, constructed a steamboat whose speed was thirteen and a half miles per hour. Steamboats were not introduced into England until 1812, five years after the successful experiment of Fulton. Fulton was born in Pennsylvania in 1765, and died poor in 1815. Congress, we believe, has, within a few years,

given $100,000 to his heirs as some remuneration for his important services to commerce.

George Stephenson, who died in 1848, may be regarded as the father of the present system of railroads, having made the first locomotive in 1814. He commenced life a poor colliery boy, was in the habit of performing every species of drudgery for a livelihood, and frequently dined off a red herring, seated in a hedge bottom. Subsequently, as his fame and wealth increased by the extension of railroads, he dined with kings, was courted by the nobility, and Parliament delighted in paying him honor.

It was not until his "Rocket" carried off the prize on the Liverpool and Manchester Railway, Oct. 6th, 1829, (four years after the opening of the Erie Canal,) that safe traveling at the rate of twenty or thirty miles per hour, was possible to the human race. The number of miles of railroad in operation throughout the world, Jan. 1st, 1859, is exhibited in the following table:

United States,	28,454
British America,	1,848
Mexico and West Indies,	515
South America	391
Europe,	24,593
Asia,	602
Africa,	130
Australia,	92
Total,	56,025

It will be seen that there are more miles of railroad in the United States than in all the rest of the world put together.

New York is the terminus, including the New York Central, of 1,549 miles of railroad, at a total cost of $101,289,243.

Boston is the terminus of 545 miles, at about one-third the cost of the railroads terminating in New York.

Philadelphia is the terminus of 705 miles, costing $71,254,300.

Chicago is the center, including the whole length of the Illinois Central, of 2,289 miles of railroads, costing $107,841,848.

All the large cities of the Union are now as much connected by railroads as by the telegraph, and New York, as the center of commerce, may be regarded as the terminus of most of the railroads of the country.

As the fall of the apple from a tree suggested to the mind of Newton the laws which govern gravitation, so the phosphoric appearance of the ocean one summer's evening suggested to the mind of Morse the subject of electricity and magnetism; and before morning, the idea of communicating intelligence by this medium was unfolded to his intellect. On his arrival in New York from a visit to Europe, he constructed a machine, and in private tested the practicability of the scheme. There is no instance of any attempt to record or print characters by means of electro-magnetism previous to the invention of Morse, in 1832. Whoever may succeed in uniting the Old World and the New, by means of the Atlantic cable, will only add another link to the fame of the American inventor.

The sewing machine may justly be ranked among the great labor-saving inventions of the age. About 300 different patents have been issued for improvements in this machine. The first successful patent was that of Elias Howe, Jr., of Massachusetts, in 1846, and there are three leading manufacturers of these machines,—Wheeler & Wilson, Grover & Baker, and I. M. Singer & Co.

In the fine arts, the method of fixing images of objects by the camera obscura, discovered by Daguerre, of France, is equally wonderful, and while it enables the poor equally with the rich to preserve the likenesses of their friends, dispensing with the costly portraits of the pencil of the artist, it is with the telegraph of essential importance in

the hands of the detective police, in furthering the ends of justice by the apprehension of offenders.

The enumeration of these few important inventions and the beneficial results to society therefrom, speak volumes in favor of encouraging the instruction of the youth of the country in mechanics and the useful arts. Yet the bill passed by Congress granting a few sections of the Public Lands to all the States in aid of Seminaries for instruction in Agriculture, Mechanics, and the useful arts, *was vetoed by Executive folly*. The youths of the country are instructed at West Point in the arts of *War*, with money annually appropriated from the national treasury. Millions are annually appropriated to support the Navy needed for the protection of *Commerce*, only one of the interests of the country, and a tariff is frequently adjusted so as to afford protection and encouragement to *Manufactures*. To all this we have no objection. It seems to us to be no more than *equal justice*, that while the youths are instructed in the arts of *War*, something should be done for the arts of *Peace*—that while commerce and manufactures are protected, something should be done to foster agriculture and the mechanic arts. What! shall the historian place upon the page of history that while the President signs bills appropriating a few sections of the Public Lands to the new States for the endowment of Universities where the *dead languages* and *polite literature* are taught, he withholds his signature to bills granting the same number of sections of these lands to all the States who have an equal interest in the public domain, to aid in establishing Seminaries for instruction in *Agriculture*, the great interest of all countries, and in *Mechanic* and *Useful Arts?*

Let us scan this matter. There are in this country two great divisions of labor, *free* labor, and *slave* labor. The slave power is radically hostile to educated labor, holding that the mind and muscle employed in productive industry ought to be distinct and separate, prohibiting by

penal laws the education of their slaves, not even allowing them to be taught the alphabet; and while it is regarded in the Slave States as dishonorable for white men to labor, the establishment of an Industrial College in a Slave State would be as great a solecism as a blacksmith's shop in a powder-house. Hence the hostility of the South to the passage of this bill; and the President, influenced and controlled by the slave power, as their tool and instrument, dare not do otherwise than obey the power that elected him. The bill passed the House the 22d of April last, by 104 yeas to 100 nays, divided thus:

Free States—Yeas, 91; Nays, 37.

Slave States—Yeas, 13; Nays, 63.

The Senate concurred by 25 yeas to 23 nays, divided sectionally, as follows:

Free States—Yea, 21; Nays, 4.

Slave States—Yeas, 4; Nays 18.

Notwithstanding the hostility of the slave power to these industrial institutions, as exhibited by their vote in Congress, and notwithstanding the President's veto to the appropriation of land to their aid, Michigan has an Agricultural College in full operation; and the State of New York, on the 7th of July last, laid the corner stone of a similar institution, at Ovid, on the banks of Seneca Lake. The Free States dread not the influence of education and the dissemination of knowledge among all classes of the people. While by law in most of the free States a primary school must be taught at least three months of the year in every school district of the State, *free;* in others, the parents are obliged by law, as in that old monarchy, Prussia, to send their children to school at least that period in every year.

We avail ourselves of these annual fairs and every other means that tend to enhance the value and confer dignity upon free labor. When we look around upon our fair

country, teeming with the fruits of industry, vocal with the sound of the anvil and the loom, blessed with all the institutions of a free people, penetrated by railroads and densely populated, with flourishing villages and cities, where but yesterday the solitude of the unbroken wilderness reigned supreme, who is there among us, as he contrasts the situation of Michigan and its statistics, with those of Arkansas, a slave State, which entered the Union at the same time, but must be proud of the State of his adoption, and convinced of the superior advantages of free labor?

THE FARMERS AND MECHANICS' SOCIETY OF HOMER.

The following report is taken from the Marshall *Statesman:*

The above Association held its first Fair on Tuesday and Wednesday of last week. We had the pleasure of witnessing their exhibition on Wednesday, and found it quite beyond our expectation. The village of Homer is surrounded by a scope of country, which for natural fertility of soil, is rarely exceeded by any portion of the fertile West.

The more enterprising and public spirited of some three or four townships united to form the Society whose first effort is but an earnest of what they will be able to do hereafter. The weather was favorable, the attendance large, and all seemed interested and delighted. The whole affair was well managed, and we think it must have exceeded the anticipations of its originators.

We cannot pretend to notice each article and variety, as our time there was too limited for that, and we should only do injustice by the attempt. The specimens of corn, wheat, oats and barley, were excellent—the wheat especially was unrivaled. Of vegetables, there were potatoes,

tomatoes, beets, cabbages, carrots and onions, that could not be beat anywhere. Michigan must have a genial soil for the Neshanock, or Mercer potato.

But the most remarkable feature of this show was the apples, which for size and beauty have seldom been equaled in the State, and never matched outside of it. We were gratified to see that many of the best varieties were seedlings, from which we anticipate indefinite improvement in this staple fruit. Other States may rival us in the production of the pear and the grape, but when it comes to apples, stand back and clear the track for Michigan. It is no uncommon thing to find apples here that will weigh from a pound to twenty ounces.

We noticed two varieties of pears that we never saw excelled. As the peach season is nearly over, we did not expect to see much in that line, but there were some very fine specimens produced by Mr. O. Dunton and Hiram Smith. But we must not mention names, as we are not sufficiently informed to do equal justice to all. The show of grapes was highly creditable for this season.

In the department of fine arts, needle-work, and domestic fabrics, the exhibition would do credit to a county fair, but we cannot go into detail, for reasons already stated. We were informed that the editor of the Albion *Mirror* was on the ground, taking an inventory of the entire exhibition, and we presume he will give full credit to each exhibitor.

We were indebted to the President of the Society, Hon. Hiram Smith, for a good dinner, and to the officers and managers generally, for kindness and civility. The farmers of Homer, Eckford and Clarendon, together with all who live in their midst, and depend on them for support, are a highly favored people. They have a naturally productive soil, which is of the first importance, for on that everything depends. They are well advanced in the career of improvement, and with the spirit which appears

to animate them, will soon reach that wise and systematic method of cultivation for which their land is so peculiarly adapted. As we expect to have something more to say to them on agriculture, we will drop the subject with this remark: The main reliance of the farmer throughout the temperate latitudes, is *grass*. By aid of an abundance of grass every other crop may be made to grow abundantly. The first lesson in the art of cultivation is how to produce the most grass on a given quantity of ground.

Since writing the above, we have received the Albion *Mirror*, from which we copy the following account of the exhibition:

"The ladies, it was evident, had been at work too, if the beautiful needle-work, splendid bouquets of flowers, jars of excellent preserves, choice bread, rolls of golden yellow butter, superb cheese, &c. &c., which were on exhibition, were any indication. The ladies acquitted themselves in their part of the exhibition, to the admiration of all. Among the articles, we noticed some beautiful needle-work by Mrs. J. W. Sheldon, of this village.

Mr. H. S. Cassidy, of this village, had on exhibition a splendid collection of photographs and ambrotypes, which gave good satisfaction to all who beheld them. Mr. J. F. Lewis, of this village, exhibited two beautiful specimens of centre-table tops. One of them represented several varieties of marbling, and the other presented various kinds of wood, by graining.

In stock, as far as cattle are concerned, the second day did not exhibit as large a number as the first. The largest number exhibited by one person, was those of Mr. A. B. Waterman. His cattle were principally of the Devon breed, and were noble specimens, and will compare well with any we have seen. A pair of Devon steers, owned by Mr. Talmadge, were admired by all who saw them. The number of cattle on exhibition during the two days,

was quite small, but steps are already being taken for another exhibition, which will give a better display.

The exhibition of sheep was excellent, and cannot be beat at the County Fair. The townships of Homer, Albion, Eckford and Clarendon, are said to be the best wool-growing towns in Calhoun county, and will not be beat by any four contiguous towns of equal population in the State.

Of the swine, there were small hogs and large hogs, all excellent specimens of their different breeds. Col. A. L. Deming showed us his drove of pure blood Chinas, and half China and half Suffolks, which were the favorite breeds on the ground.

The exhibition of horses, Black Hawks, Morgans, Sir Henrys, Foresters, Hornets, Boguses, teamsters, roadsters, trotters, &c., were quite numerous, and drew the attention of the people more than any other class of animals on the ground, of which there were many noble specimens. We noticed F. A. Harroun, T. Swift, and others, of this village, were present with their horses. Mr. S.'s span of matched bay geldings attracted much attention. In fact, in our humble opinion, they made the finest appearance of any matched span of carriage horses at the fair, and we doubt whether they can be equalled in the county in any particular.

Mr. E. P. Potter, who has long been a resident and manufacturer in Homer, had on the ground all the most improved plows and cultivators of the day. We were especially interested in his sorghum crusher, which will separate one gallon of juice from the stalk in two minutes. It moves by horse power, though one horse has a very easy job to keep it going all day. The machine is so constructed that it seems to us that it will rarely, if ever, need repairing. Individuals who love to be always accommodated with good farming implements at cheap prices, will do well to call on Mr. E. P. Potter, of Homer.

Dr. Stebbins, of Marshall, and Rev. Mr. White, of Somersett, being called upon, addressed the society very appropriately.

The entries and awards will be published in our next issue."

THE FARMERS' AND MECHANICS' UNION INSTITUTE OF BATTLE CREEK.

MR. R. F. JOHNSTONE, *Secretary of State Agricultural Society.*

DEAR SIR:—You herewith find transactions of "*Farmers' and Mechanics' Union Institute of Battle Creek,*" for the preceding year, in accordance with section eight of an "Act to authorize the formation of County and Town Agricultural Societies, approved February 12th, 1855."

Said Institute was organized on the 13th day of August, 1859, by the election of Charles Merritt, President; G. W. Hyatt, Secretary; V. P. Collier, Treasurer; R. Sanderson, H. Sandford, Charles Cory, John Stringham, and G. H. Williams, Directors.

First annual exhibition of Institute was held on grounds of the *Michigan Central Track Association,* on the 18th, 19th and 20th days of October last, when a very full list of premiums was awarded.

Preparatory to the exhibition the Institute expended for buildings pens, track, &c., the sum of	$ 513 61
For feed, police, gates, and other expenses during the Fair	270 58
For premiums paid to date, ...	432 51
Total, ...	$1216 70

Receipts of the Institute were as follows:

Subscriptions, ...	$ 286 00
Rent of Dining Hall, ...	50 00

Sundry Shows,.....	$24 50
Membership and Entrance Tickets,.....	1257 79
Total,.....	$1617 29

On the last day of the exhibition Rev. George Willard, Rector of St. Thomas' Church, delivered the Annual Address, after which the Institute proceeded to the election of the following officers for the ensuing year:

President.—Enos T. Lovell, of Climax.

Vice Presidents.—H. Hamilton, of Ross; Thos. J. Humphrey, Johnstown; Chas. Merritt, Battle Creek City; G. N. Robinson, Leroy; James Newbre, Emmett; W. F. Hart, Athens; Warren Frink, Battle Creek township; J. P. Beach, Penfield; Simeon Baker, Newton; Richard Jones, Assyria; J. D. Adams, Climax; O. Bush, Charleston.

Secretary.—D. B. Burnham, Battle Creek.

Treasurer.—V. P. Collier, Battle Creek.

Directors.—Jeremiah Brown, of Emmett; E. W. Pendill, Battle Creek City; Edward White, Battle Creek township; Gunsill Birdslee, Newton; Willit Bristol, Johnstown.

The Executive Board met in compliance with the constitution, on the second Wednesday of December, and prepared a premium list for the next annual fair of the Institute, and appointed the 26th, 27th and 28th days of September next, for the holding of the same.

D. B. BURNHAM,
Secretary.

V. P. COLLIER,
Treasurer.

EATON COUNTY.

To the Secretary of the State Agricultural Society:

DEAR SIR—In compliance with statute, I herewith transmit to you a report of the receipts and disbursements of

the Eaton County Agricultural Society, for the year 1859, as fully as the same can be done at this date.

1859.		Dr.
Jan. 1.	To amount on hand,.....	$102 31
Sept. 28.	" rec'd for adm'n tickets,.....	127 33
"	" " membership "	404 50
"	" " county treasurer,.....	50 00
"	" " all other sources,.....	13 00
Total,.....		$697 14

1859.		Cr.	
Jan. 15.	By am't p'd John Morris, Sec. '58,	$ 25 00	
"	" G. T. Rand, Treas. "	16 00	
"	" for books and stationery,	6 56	
"	" for postage,.....	1 00	
Oct. 1.	" in premiums for 1859,..	335 56	
"	" do.	6 43	
Oct. 15.	" current expenses, &c...	245 30	
"	" E. T. Church, Sec. '59,	25 00	
"	" E. S. Lacey, Treas. '59,	20 00	
Dec. 20.	On hand,.....	16 29	
			$697 14

Yours truly,
E. S. LACEY,
Treas. Eaton Co. Ag. Society.

The Fifth Annual Fair of the Eaton County Agricultural Society, was held on the grounds of the Society, in the village of Charlotte, on Monday, Tuesday and Wednesday, the 26th, 27th and 28th days of September, 1859.

Monday, the first day, was devoted to the entry and arrangement of stock and articles intended for exhibition. On Tuesday the several viewing committees commenced their examinations. In the evening there was a meeting of the Society held at the Court House, when officers were elected for the ensuing year, after which the meeting ap-

pointed a committee to revise the constitution and by-laws of the Society.

On Wednesday, at 1 o'clock, P. M., the Annual Address was delivered by the Rev. M. W. Fairfield, President of Olivet College.

At 2 o'clock the reports of the viewing committees were read.

OFFICERS ELECTED FOR 1860.

President—John Dew.

Treasurer—E. S. Lacey.

Secretary—E. T. Church.

Vice Presidents—Sanford D. Morse, E. S. Ingersoll, Henry Earl, Luther Bosworth, Nelson Ferris, Martin L. Squier, Asa Mitchell, J. J Higby, Edmund Lewis, J. P. Hall, Harvey Williams, Hiram Gridley, James Luscomb, B. W. Warren and H. L. Dewey.

The number of entries was larger than any previous year, being 1055, as follows:

The number of entries for trotting was 19, stallions 18, matched horses 28, single horses 23, mares and colts 76, Durham cattle 8, Devon 8, cross of bloods 11, grades and natives 49, oxen and steers 32, sheep 45, swine 10, poultry 17, grain 108, vegetables 148, fruit 87, domestic manufactures 103, fancy articles 63, pictures and flowers 30, culinary articles 99, farming utensils 10, mechanic arts 35, plowing 16, miscellaneous articles 24.

The first day of the Fair being stormy, many were prevented from coming to town and making their entries.

On the second and third days the weather was very pleasant, the attendance exceedingly large, and it is believed the Fair passed off to the satisfaction of all parties.

E. T. CHURCH,
Secretary.

Charlotte, Dec. 19, 1859.

GENESEE COUNTY.

Tenth Annual Report of the Executive Committee of the Genesee County Agricultural Society, 1859, *adopted at the Annual Meeting of the Society, held at the city of Flint, on the* 11*th of January*, 1860.

Under the by-laws of our Society, the Executive Committee are required, at each Annual Meeting, to make a report in writing of the general condition of the Agriculture, Horticulture and Manufactures in the county.

The past year has witnessed some unusual atmospheric phenomena, which have produced serious results to the farmers of Genesee, in common with their brethren of other counties, States, and, indeed, of a very extensive region of this continent. The most uncommon, and most important, in their effects, were the occurrence of heavy frosts, in the month of June, at a very critical time for the wheat crop, a large part of which had been raised with a view to early maturity, as a means of escaping the ravages of the insects which had damaged that crop more or less, for several seasons past. It will be recollected that nothing could be more promising than the general appearance of the wheat fields just before the visitation of the frost; and farmers were congratulating themselves upon the prospect of a yield that would make some amends for the short crops of previous years. Immediately after the first severe June frost, however, a general impression seemed to prevail that the wheat plant was killed; and its appearance was watched with much concern and no little apprehension. With some few exceptions, the wheat fields continued to grow vigorously and look healthy, and again the hopes of farmers were raised into the confident expectation of a large crop, even experienced agriculturists being deceived in this regard, until the yield was brought to the test of threshing out. It then became manifest, that while the quality of the berry was very fine, the quantity

had been diminished by the action of the frost, from one-third to one-half of what it ought to have been.

The corn plant fared even worse, being very generally cut to the ground by the first June frost. Some of it started again, and other fields were re-planted. In consequence of the unfavorable appearance of the staple crops about this time, an unusual quantity of buckwheat, turnips and ruta bagas was sown; the yield of the root crops has been large, but the buckwheat was extensively cut off by later frosts, which again unseasonably made their presence felt in August and September, and preventing the ripening of late corn; that product did not average over half a crop, being very excellent in some localities, and quite worthless in others.

The frost in June also badly injured the grass, both in meadows and pasture fields; and the drought which followed tended to prevent its recovery. The consequence has been a scanty crop of hay.

The quality and yield of oats has been better than for several years past; the straw has generally been light, but the grain well filled.

From causes fully understood, but partly ascribed to the cut-worm, much of the seed barley that was sown failed to grow, so that the plants were very thin upon the ground. What came up, however, did well and produced a comparatively good crop.

The quality of potatoes was generally fine, and in some localities the production was large, but on the whole the crop was, probably, not an average one in quantity.

Under-draining seems to meet the continued favor of those who have tried its effects, and others are induced to commence it, from observation of its beneficial effects upon their neighbors' lands. The advantages of deep plowing are also becoming better appreciated, and the practice extending.

Fruit suffered injury from the summer frosts of 1859, in

common with the cereals; and although the damage to some species, as apples, was not at first apparent, and the specimens of this fruit exhibited at the annual fair could hardly be excelled in beauty or quality, it is now being discovered that their keeping properties are not so good this season as usual, which is generally attributed to the effect of the frost on the fruit, while yet immature.

As the result of our observation, the general condition of the agriculture of Genesee county may be abridged to the following summary:

The agriculture of the county is making some progress. The principal crops cultivated are wheat, corn, oats and potatoes. Barley, buckwheat, rye and peas are raised to some extent.

The past season has been unfavorable for the production of many of the above named crops. The frost in June took about one-half of the wheat crop; many pieces were not worth harvesting; corn was killed to the ground, and some fields had to be re-planted.

The drouth following the frost kept back the corn, potatoes and buckwheat; some fields of these crops ripened, others were injured by the early frosts in August and September.

Grass, for mowing, was greatly injured by the frost in June. Old fields were nearly killed, while cultivated fields recently seeded produced a fair crop. Fields in clover produced well.

Present prices seem to show that the county produced no large surplus of the above named crops in the year 1859.

The improvement in Stock, referred to in previous reports of our Society, appears to be pursued with unabated interest.

In horses, above any other class of animals, is the improvement especially manifest, year after year. Never

before did the county make so fine a show, particularly of colts.

Cattle did not make so good an appearance, their condition being impaired by the injury to the pastures already mentioned. But the breeds are gradually improving, and some choice high-blooded animals, at large prices, have been introduced the past fall by several of our leading farmers, from the celebrated Durham herds of Messrs. Sly & Sons, of Plymouth.

The culture of wool is also receiving much attention, and our county begins to acquire a high reputation with wool-buyers for the quality of the clip. Thus the care which our sheep farmers are devoting to the blood and quality of their flocks, is likely to prove richly remunerative, wherever it is judiciously bestowed, and we have reason to believe that the general character of the wool sheared in this county will compare favorably with that of any other in the State.

In hogs, a considerable trade is done, and here, also, efforts to improve the breed are meeting with good success.

The leading manufactures of the county are lumber, shingles, steam engines, farming implements, carriages and wagons, saddlery and harness, cabinet ware, window blinds, sash and doors, stone ware, pearlash and saleratus, soap and candles, brick, boots and shoes, &c., all of which are in a flourishing condition, together with a variety of manufactures of a more domestic character.

With this compliance with the requirements of the by-laws, it remains for your committee to give some account of the proceedings of the society for the past year.

At the Ninth Annual Meeting of the Genesee County Agricultural Society, held on the 12th of January, 1859, Henry Schram, President, in the chair, the Ninth Annual Report of your Executive Committee was read and adopted.

The Reports of your Auditors and Treasurer were also

presented and adopted, showing the following financial statement for 1858:

Receipts for County Tax,.....	$100 00
Receipts of Ninth Annual Fair,.....	406 94
Total receipts,.....	$506 94

DISBURSEMENTS.

Paid installment of purchase money for Fair Grounds,.....	$182 25
Paid Cash Premiums,.....	235 64
Paid all other expenditures, for Fair, &c.,.....	80 05
Total disbursements,.....	$506 94

The following persons were elected officers of the Society for the year 1859:

President.—Dennis Woolverton, of Grand Blanc.

Vice Presidents.—I. R. Middleworth, of Argentine; E. G. Gale, of Atlas; P. A. Skinner, of Burton; J. E. Brown, of Clayton; Edmund Perry, Jr., of Davison; C. T. Thompson, of Fenton; S. N. Warren, of Flint City; A. S. Donelson, of Flint; Henry French, of Flushing; Lyman Crowl, of Forest; Jas. Van Vleet, of Gaines; Sherman Stanley, of Genesee; Isaac Schram, of Grand Blanc; John McKenzie, of Montrose; H. D. Root, of Mt. Morris; Ebenezer Bishop, of Mundy; Andrew Cook, of Richfield; John Brabazon, of Thetford; C. L. Cole, of Vienna.

Secretary.—F. H. Rankin, of Flint City.

Treasurer.—R. W. Jenny, of Flint City.

Executive Committee.—Jonathan Dayton, of Grand Blanc; D. H. Seeley, of Genesee; G. W. Thayer, of Mt. Morris; Henry Schram, of Burton; Levi Walker, of Flint City; J. L. Gage, of Burton; Daniel Clarke, of Flint City.

Auditors.—Grant Decker, of Flint City; Harlow Whittlesey, of Burton.

The Executive Committee met on the 24th of March, and prepared the following:

Messrs. C. H. Rockwood, of Genesee, S. D. Halsey, of Grand Blanc, and J. W. Begole, of Flint City, were appointed Viewing Committee on farms.

It was also ordered, that the constitution and by-laws of the Society together with the premium list and annual reports, be printed, and a copy sent to each member of the Society; which was done in every case where the address of the member was known.

It had been usual to hold our annual Fairs in the first week of October; but in 1859, the fair of the State Agricultural Society being appointed to be held about that time, it was deemed advisable to change the time of our Fair to the last week of September, which was accordingly done.

The Executive Committee again met on the 29th of August, and appointed Grant Decker, Esq., Marshal of the approaching Fair. At that meeting the committee also appointed the various viewing committees, and established the regulations for government of the Fair; and Nathaniel Ladd and Richard Judd, were appointed a committee to select and stake out ground for the plowing match.

The Fair was very successful. Making allowance for the circumstances of the season already spoken of, the exhibition of animals and products was such as the county might well be proud of, and a very large crowd of members and visitors thronged the grounds during both days. The weather was as favorable as could be desired. In compliance with the invitation extended at your last annual meeting, B. M. Fay, A. M., delivered the Annual Address, which he declined to have published.

On the third of October the Executive Committee met to review the awards of the viewing committees.

Finding the committee on horses for all work, (Class VII.) had not completed their report, it became necessary to refer it back to them for further information, which was done; and representations having been made to the

Executive Committee, that in the awards upon fruit, (Class XXII.) there had been a violation of the printed general regulations, in the rule which provides that "no person competing for premiums can act as judge in the class in which he is competitor," the same was referred to Mr. G. W. Thayer, as a special Committee, to make the proper inquiries, and report at a subsequent meeting. With these exceptions, the awards of the viewing committees were then all confirmed.

The Executive Committee had an adjourned meeting on the 22d of October, when the revised report of the committee on horses for all work was received and adopted.

Mr. Thayer, the special committee in relation to the awards on fruit, reported that the exhibitor of lots Nos. 429, and 431, was a minor son of the chairman of the viewing committee on fruit, and living with him; on learning which, your committee deemed it their duty to reject the awards of premiums made to those numbers.

Judging by the amount of interest manifested in the crowded attendance upon our Fairs, and a comparison of their results with the published report of similar Societies in other counties, together with the several unfavorable seasons under which the agricultural interests of the county has suffered, we feel justified in congratulating this Society upon its eminent prosperity. The record shows an increase in the members this year, over the last, of more than 100, and a corresponding addition in the entries for competition. But, the weight the Society has had to carry, in providing every year for the gradual discharge of the debt incurred to purchase its Fair grounds, has necessarily kept the ratio of premiums lower than your committee would like to see them; has also for several years deprived the Society of means to appropriate any money for discretionary premiums; and we have also felt the want of a better class of buildings for the exhibition of manu-

facures, art, fruit, vegetables, &c., without being able to remedy the deficiences in an adequate manner.

These circumstances have formed the subject of earnest deliberation with your committe, and after full consideration, we agreed at our last session, to recommend to this meeting to amend section two of the constitution, by striking out the words "*a resident of this county*" in the first line, and also by substituting "*one dollar*" for "*fifty cents*," as the annual fee for membership.

It is believed that this change would enable the Society to offer a tariff of premiums which would hold out stronger inducements for competition, and afford a more adequate compensation to the exhibitor for the expense he must be at, in bringing his animals and products to the Fair, as well as in previous preparations for a successful exhibit, when there.

For the statement of the financial condition of the Society, for the year 1859, we refer you to the report of the treasurer.

All of which is respectfully submitted.

For the Executive Committee,

F. H. RANKIN,

Secretary.

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REPORT OF COMMITTEE ON FARMS.

To the President and Members of the Genesee County Agricultural Society:

The Committee appointed to examine Farms entered for premiums at the Fair of 1859, would respectfully submit the following report:

There were three farms entered for premiums, to wit: William Bendle's, of Burton, William Eckley's and Charles C. Pierson's, of Grand Blanc. Your committee proceeded to view the above mentioned farms on the second day of July last, but owing to a severe rain storm which lasted

all the forenoon of that day, the time we had to perform our duty was too short to take any but a very superficial view, and we hope that if our report is not as full as might be desired by some, that it may be overlooked on account of the shortness of time we had to devote to our duty.

The first farm that we viewed was William Bendle's. This farm contains ninety-one acres, and has quite a variety of soil, clay, gravelly and sandy loams predominating. The buildings on this farm are not what would be called first-rate, being somewhat old. The general arrangement of the lots is very good, being of easy access for farm labor. The fences are very good, and as far as we saw, the farm was free from foul or noxious weeds. The crops growing on this farm were grass, wheat, oats, corn and potatoes, being principal crops. The grass was very light; wheat, good growth of straw, but badly injured by the frosts of last June, the variety of wheat was Tuscany; corn quite poor, but well tended and free from weeds; oats and potatoes first rate at that time. The stock on this farm is good, being a high grade Durham; some of Mr. Bendle's heifers we consider very fine. The sheep on this farm are a cross of Merino and Leicester, which, in the opinion of your committee, is bad breeding, the cross not being as good as either variety bred pure.

Mr. Bendle summer-fallows for wheat, and applies his manure before breaking up of fallow; has no regular rotation of crops; neither has he under-drained any as yet. Your committee are of opinion that much of this farm would be materially benefitted by draining.

We next visited Mr. Eckley's farm. This farm contains sixty acres, forty improved. The soil is mostly a black gravelly loam; the buildings on this farm are very poor; and the general arrangement of farm lots is not as good as might be. The general appearance of the farm, consequently, was not as good as we expected to find. The crops growing on this farm were grass, wheat, corn and

peas, as principal crops; the grass very light, with a small exception; wheat rather light and badly injured by frost; corn first rate, the best, by all odds, that we saw; peas first-rate. The stock on this farm is about the same quality as Mr. Bendle's. Mr. Eckley sows wheat after spring crops. He is under-draining his farm as fast as possible with limited means, and has something like one hundred rods now laid.

Mr. Eckley is also making some hedges of the common thorn of the country, which, from what we saw, promises to be of great utility. Some that had been set but three years had made a good growth and appeared already capable of turning the most of smaller animals. Mr. Eckley commences his hedges by first well pulverizing and manuring his ground; then takes the common thorn, such as we find through our woods and lots, cuts them close to the ground, when he transplants them, and after that they need no more care except trimming according to fancy. Your committee, although they saw a good deal of commendable enterprise on Mr. Eckley's farm, considering the means at command, yet do not consider that the general appearance of his farm would warrant them in awarding him a premium over either of his competitors.

Lastly, we viewed Mr. C. C. Pierson's farm. The soil of this farm is a clay and gravelly loam, and contains one hundred and forty acres. The buildings are first-rate, being new and conveniently arranged. The general arrangement of the farm lots is good, of easy access to the barn, and for labor; the fences are all first-rate, well staked and capped with No. 8 wire, which is thought to be cheaper and more durable than wood caps. Mr. Pierson is fast under-draining his farm; he has some seven hundred rods under-drained already, which is probably more than any other farm in Genesee county. Your committee are of opinion that his crops showed very materially the good effects of his under-draining. The drains are all laid of

white oak timber, sawed and split similar to staves, but thicker, and covered with pieces similar to barrel heading. Your committee are of opinion that drains constructed in this way are not as durable, neither as cheap, in the end, as a good tile drain. The crops growing on this farm were grass, wheat, corn, barley and oats, as principal crops. Grass good for this season; we saw none but that would yield a ton or more per acre; wheat, stout, and not injured by the frost near as bad as the others that we examined; corn, good; barley and oats, first rate. The stock on this farm consisted of horses, sheep, cattle and swine. The horses were nothing to brag of; sheep were good Spanish Merino, with some culls in the flock, they having been injured by dogs; the cattle and swine were first-rate; the cattle were full blood and high grade Durhams, and some of them superior. Mr. Pierson does not summer-fallow for wheat, but prefers to sow after spring crops, such as barley or peas; his manure is applied to his spring crop where he intends to sow wheat. He thinks this method preferable to naked fallow. Your committee are of opinion that Mr. Pierson's farm will compare favorably with any farm in the county, or even the State.

Your committee, after due deliberation, have awarded the premiums as follows:

First premium, C. C. Pierson; second premium, William Bendle; third premium, William Eckley.

C. H. ROCKWOOD,
S. D. HALSEY,
J. W. BEGOLE,
Committee.

Dated Flint, Sept. 28, 1859.

HILLSDALE COUNTY.

Report of the Executive Committee of the Hillsdale County Agricultural Society for 1859, *for their Annual Fair, held October* 12 *and* 13, 1860.

Whole number of entries made, 870, as follows:

Of cattle,	121
" horses,	272
" sheep,	45
" swine,	15
" fowls,	13
Manufactures of every class,	221
Products of the soil,	149
Unenumerated articles,	34

Of which 345 were awarded premiums, amounting to $540, as also 74 diplomas, which were in every case designed to apply to a first class animal or article.

Our receipts were from membership tickets, 681, at 75 cents each, ... $510 75
Gate tickets at 10 cents each, ... 315 30

Total, ... $826 05

Making the Fair a decided success.

In addition to the above, the Society have made improvements to their grounds, from donations received, amounting to about $500.

The Annual Address was delivered by Prof. Fisk, of the Agricultural College, which was in every way a very practical and scientific production; and your committee have only to regret that it is not in their power to lay it before the farmers of Michigan.

All of which is very respectfully submitted.

J. B. CARD, *Chairman.*

F. M. HOLLOWAY, *Sec'y.*

ADDRESS

Delivered at the Hillsdale County Fair, held at Jonesville, Oct. 7, 1858, by D. L. Pratt, Esq.

Mr. President, Ladies and Gentlemen:

I shall not on this occasion go back to the early history of our race, and trace the improvememt made in agriculture to the present time, however amusing or profitable the task might be. Neither shall I travel into foreign countries after expensive or far-fetched fertilizers to enrich our lands. I shall deal with subjects at our own doors, and make this a practical discourse to practical Hillsdale county farmers. In doing this I shall forego all attempts at oratory, and shall not address you in the language of flattery, however much I may see to praise and admire. Your exhibitions here to-day speak a more eloquent eulogy than any I could hope to deliver, and teach lessons far more profitable than any theories of mine.

In this address I shall speak of a few of the wants and hindrances connected with farming operations in Hillsdale county; and suggest such remedies and improvements as I may deem desirable.

And first with regard to the roads—much has been done to improve the roads in Hillsdale county, but still many of them are sadly deficient. I hardly know of a highway upon which a farmer can drive a team five miles at a fast trot without danger of breaking his vehicle to say nothing of his neck. Pray what is the use of training fast trotters without good roads to drive them on? On how many of our roads can you draw fifty bushels of wheat to market? You farmers living on farms remote from market, have you ever computed the expense of taking your produce to market and how much might be saved by good roads?

I have done something as agent in selling real estate in this county, and I have always found that lands of the same quality sold more readily and for better prices, on

good roads, than on poor. From my experience and observation I am justified in saying that lands and farms situated on good roads are worth and will sell for one quarter more than those situated on poor roads.

Those of you who live on poor roads lose more than you are aware in the sale of your productions. When there is a demand for your vegetables, fruit, cattle, sheep, hay, oats, corn, &c., those who deal in such articles will go first out on the best roads to hunt them up.

The mistake is in a disposition to shirk the highway tax, to work as few hours each day as possible—to make our oxen, carts, plows, scrapers, &c., each count a day. The remedy is, to make no charge for our utensils, to work as many hours faithfully as we do on our farms, and then if the roads are not good make bees and do extra work enough to make them good. The saving in time and wear and tear of teams and wagons will more than repay us for the extra work.

Second—*Of our swamps and marshes.* The swamps and marshes in this county are considered by many as the most worthless portions of our land. These swamps are unsightly objects and have long been avoided as ungenial territory. In the summer the miasma that arises from them produces the bilious fevers which afflict our inhabitants every year more or less.

At present they retard the settlement of the county very much, and are one of the greatest hindrances we have to contend with. Most of our farmers, in clearing their farms, shun them as they would the pest house, and clear round them, leaving them to breed frogs, snakes, and fever and ague, and to pollute our atmosphere. Lying in the midst of our farms with their ragged edges projecting into our cleared fields, and covered with decaying timber, they are repulsive to the sight, and make the country look dreary and unproductive. Some enterprising farmers have drained these swamps and marshes and brought them

under cultivation, and have found them the most productive portions of their farms.

I will mention the experience of Thomas Burt, a scientific and successful English farmer, who has improved a large farm in Ransom, and who has probably made more drains, and brought under cultivation more acres of swamp land, than any other farmer within the county. He informs me that he can subdue and bring under cultivation one acre of shaky, boggy, cranberry marsh, with less expense than he can clear one acre of heavy timbered land; and that when subdued they are worth four times as much for grass or corn. He says he considers his willow and cranberry marsh as the most valuable portions of his farm; and that he would not choose a farm destitute of swamps and marshes. He says there was a knob in one of his fields containing about an acre of yellow clayey and gravelly soil, so worn out that it would hardly yield the seed sown upon it; that he gave it a dressing of barn manure, and muck from the cranberry marsh, and harvested thirty-one bushels of wheat to the acre—that he seeded it down and annually mowed heavy grass from it for five years. Tamarack swamps have been cleared and drained and converted into good corn ground. In fact there is no difficulty in changing them all into the most productive meadows, pastures and corn fields where there is sufficient fall to drain them.

Again: Swamp muck has been found to be one of our most valuable fertilizers. As the inhabitants of this county are more interested in the draining and cultivation of these swamps and marshes than in anything else connected with farming and the improvement of the county, I cannot more profitably occcupy a portion of my time, than by reading extracts from an article "on the use and value of swamp muck," written by Simeon Brown, of Mass. He says: "A higher cultivation on less land, but with more manure is the great object of modern tillage; and the pur-

suit of this object, has led to the discovery of a material on large portions of our farms eminently calculated to restore exhausted lands to fertility, so as to render the soil as productive as when in its virgin state. Some forty years ago these boggy or swampy lands were regarded as nearly worthless for any thing except the meager timber or fuel which might be obtained from them in winter; or the scanty or coarse herbage they afford to cattle during the summer drouths. Such is the change in their value, when at the period named they would scarcely command $5 an acre, they now bring from $30 to $100; and in the neighborhood of villages located on sandy lands, where they afford the greatest benefit in gardening, they are worth $500 an acre, provided the muck is of good quality and the deposit deep and of convenient access.

Indeed, it is often said by persons about to purchase farms, that they would not enter upon such as are not supplied with meadow muck, for where it abounds, and a good barn cellar exists, thrift and prosperity are always certain.

The circumstances under which muck beds are placed are so various, that only a few general rules can be suggested with advantage.

Many of these cannot be approached with teams unless it be taken when the ground is frozen, and the springs and swamps being then usually filled with water, the excavation of the muck becomes an operation of extreme difficulty. Beds thus situated often present so many obstacles to their removal, that when the farmer is in possession of the ample means, he forgoes their advantage rather than encounter the expense and difficulty required to procure it. The only way I have been able to procure it from such localities, is to take advantage of a severe summer drouth, and throw large quantities into high compact piles, to be hauled away by sled or cart, when the surface is sufficiently frozen to support a team.

The way in which muck is most commonly used, and the most practicable and profitable mode is, to collect and store it in a dry state in some place convenient to the droppings of the stall, and then from day to day to spread upon these droppings, twice their own bulk of muck. Three cords of manure composted in this manner, are of more value than three cords of the droppings alone. This mode of preparation requires no uncommon skill, but commends itself to the practice of all, because any common laborer of the farm may accomplish it, and it needs no adjuncts from chemistry, or what are called specific manures. The method of composting manure here detailed may be be objected to because of the labor involved. The reply is, that most things in this world come to us only as the result of diligent unremitted labor. He who is content to see around him barren fields, scanty crops, and lean, starving animals, may pass along without devising ways for changing such a condition of things; growling at all propositions of amendment pointed out to him, and reaping such returns as an exhausting, skinning tillage will give him. But it is far better to be up and doing in the manufacture of manures for the invigoration of the soil. It is both pleasanter and more profitable to be pursuing an improving rather than an exhausting mode of farming.

Next to a compost of muck and barn manure, a mixture of muck and ashes is the most common, and by experienced farmers is considered the most profitable. There is no danger of error in regard to the quantity of ashes mingled with muck, only in most cases it will be likely to be too small. About 103 bushels of muck will make a cord, and if to this should be added five bushels of unleached ashes, and four cords, or twelve ox loads of about thirty-four bushels each, were to be applied to an acre, the effect would be plainly perceptible in any crop in a favorable season. But on lands hungry for vegetable matter, this allowance should be continued two or three years.

With such a dressing as this, and what manure could be spared from the barn, together with a thorough system of cultivation, even our poorest lands would soon produce permanently remunerative crops; and once in this condition it is an easy matter to keep them so. To the farmer, in his barns, styes, sinks and reservoirs, it can hardly be dispensed with, and leave a hope of profitable farming. He covers his steaming heaps with it, and their exhalations are arrested and stored up by this wonderful substance, ready to be given up again to the plants which he desires should be nourished and profited by it. Sprinkled on the floors of horse and cattle stables, it readily absorbs the foul odors, and leaves the atmosphere pure and elastic. I have known it applied to vaults where the odor was nearly suffocating, and in twelve hours no unpleasant smell was perceptible. I believe it would conquer sulphurated hydrogen, steal all its odors and disarm it of its power. As an absorbment of liquids and gasses it has a most remarkable capacity. And thus it becomes one of the cheapest and most convenient of deodorizers. Powdered charcoal could hardly be more efficacious in its results. Such are some of the uses, and such is, in fact, the value of this abundant material. Yet with all its merits, it is despised by some, neglected by others, often lying in large quantities totally disregarded, even where it is wanted most.

The stones which cover many portions of our county, are considered by many as not only useless, but an actual damage to the land. Lying promiscuously about upon the ground they are a vexation, and a nuisance to the farmer. They encumber our roads to the great wear and tear of man, beast and vehicle; they lie concealed in our ploughed grounds, ready to destroy our modern improvements for tilling the land. They overspread our meadows and grain fields, making haying and harvesting slow and tedious, and preventing the use of Horse Mowers, Rakes,

Reapers, and other labor-saving machines. But properly used and placed, these "hard heads" are a source of wealth to the farmer.

Where they are abundant and near at hand they make the best and most durable fences. Lewis Emery informs me that he and his three boys, (the youngest sixteen) drawed and laid up ten rods of stone fence in one day. The fence was two and a half feet high. Upon the top of the wall he placed a rail, over this he drove stakes, and placed another rail upon the stakes. This made a fence that will stop any domestic animal that ought to run at large, and did not need repairing for five years. C. W. Ferris, on his farm south of Hillsdale, has the best specimen of a four and half foot stone wall I have seen in the county. The cost of laying it up was one dollar per rod. Now, considering that board or rail fences have to be rebuilt as often as every ten years, and that stone fences never decay, you can readily figure out which are the cheapest where stone are abundant. And yet many farmers let their stones remain upon the surface of their tilled ground, and waste their strength and wear out their plows in moving them about, when a little extra labor would convert them into the most durable fences. Again, stones are valuable for blind ditches, and all wet lands pay well for draining. In fact, they are worth very little without drains, and the expense of making them is trifling compared with the profit they bring the farmer.

Many more stone ought to be used in building barn cellars and basements. There is no part of the barn that brings a better return for the money and labor invested than stone basements and cellars. It is the experience of every farmer who has tried the experiment, that animals winter better, and with less fodder, which are warmly stabled and sheltered, than those which are exposed. In fact, it is out of the question to raise, with any success,

our improved breeds of cattle, horses, hogs and sheep, without comfortable stables.

Again, stone are being used to a considerable extent in building farm houses. I need not inform you that they make the warmest house in winter, and coolest in summer. Those who have used them say that where stone is abundant they are as cheap as wood. And, considering what is saved in painting, much cheaper in the long run. Laid up in courses they are not only handsome, but present a permanent and substantial appearance. I like the looks of the stone farm house, and wish there were more of them in the county. They look as though their owners were permanently settled for life, and not as though they were staying till they could sell out. Those who contemplate building, and have stony farms, would do well to examine the stone houses of Milton P. Herring, of Litchfield, Lewis Emery, of Hillsdale, and S. Roberts and B. B. Willetts, of Cambria. There are doubtless many others which have not come under observation.

Another great hindrance to farming in Hillsdale county, is the stumps which cover our newly cleared fields.

This is an age of progress. We cannot wait for the stumps to rot out before we introduce the labor-saving machines. One of the greatest inventions showing the triumphs made by mind over matter, is the invention of the machine called the Stump Puller. With this machine in a field that has been chopped three or four years, about one hundred stumps can be pulled in one day. The machine costs about $150. One machine would supply the wants of a large neighborhood. If three or four farmers would combine, it need not be expensive to those wanting to use it. Mr. Sinclair, of Fayette, and Geo. W. Underwood, of Hillsdale, each own a machine that is doing good service. Those wanting to see what Stump Pullers can do, would do well to examine the fields of Underwood, and

compare those cleared of stumps with those where the stumps remain.

One great reason why so many farmers get light crops is, that they plough light, and only skim over the surface, seldom ploughing over six inches deep. The best land will soon become exhausted with this kind of tillage.

> "Plow deep while sluggards sleep,
> And you will have corn to sell and to keep,"

is a homely but true saying.

I shall not in this address go into an analysis of the soil, nor the theory of deep plowing. One ounce of experience is worth a pound of theory.

A few years ago I visited a farm which had been run down by shallow plowing and unskillful farming. The cultivated fields were covered with sorrel, and grass and clover were nearly run out. The owner got discouraged traded it off to a man of energy and perseverance. This summer I visited the farm again, and witnessed the most wonderful and gratifying change. The barns were crammed full of hay, the meadows looked green, and the second growth was rich and luxuriant. I saw upon the place one of the best fields of corn I have seen in this county. The owner explained to me that he had put on two heavy yoke of cattle, and sometimes a horse on the lead, and plowed every cultivated field from twelve to fourteen inches deep, once; that he had drawn all the manure of one year upon a ten acre field, and that he had used some plaster. He had by that means converted a barren farm into one of the most productive farms in the county. One good deep plowing will last a number of years; after that, light plowing will do.

Land, in order to produce bountiful crops, must be occasionally plowed to the depth of fourteen inches or more, and the deeper the better, provided it is thoroughly pulverized.

But in order to plow deep we must have large oxen and

large horses, and this leads me to say a few words in behalf of Indian corn. I am partial to corn. It produces more and better muscle and fat, than any other kind of food. It is out of the question to raise large cattle and horses without an abundance of corn. It is the most useful, and, I think, one of the most profitable crops the farmer can raise. The weevil, the fly, and the rust, those pests of wheat, do not destroy it. With an ordinary season, and good tillage, we are sure of a fair crop. It has not been known to fail since I have been in Michigan, although premature frosts have injured it to some extent. as long as beef and pork are in demand corn will bring good prices, because beef and pork cannot be successfully fattened without it.

And in this connection I will say a few words about fattening beef. I think one of the greatest mistakes made by our Michigan farmers, arises from selling their beef cattle at the ages of two and three. In order to derive the greatest profit, they should be kept till they are four or five, and be well stall fed before they are sold. In the reports of beef cattle sold in the New York market, we seldom, if ever, see a drove from Michigan. The droves mostly come from Ohio, Kentucky, Indiana, Illinois, and some other Western States. Our average two year olds bring about $12, and three year olds about $16. Now, if New York farmers can buy them, and feed them corn at the price corn brings in the State of New York, and make money at the business, certainly our Michigan farmers can make more money to fatten them at home, where corn is cheaper.

Frederick Fowler, of Reading, has upon the Fair ground ten fat three year old steers, which have been fed not to exceed $5 worth of grain each. Their average weight is 1,530 pounds. They have been kept on grass since the 5th of May last. One year ago last August, when but two past, he was offered $50 ahead for them. He says that he

intends to give them all the meal they will eat the coming winter, and he thinks they will weigh by next spring over 1,800 pounds each; and that he will get $100 a head for them, or $1,000 for the lot. They have gained 254 pounds each in the last five months, on grass alone. Now it don't take a large farm to raise and fatten ten 4 year old steers; and if they bring $75 a head it is the best business a farmer with a grass farm can do—certainly better than selling ordinary two year olds for $12, and three year olds for $16 or even $20. Besides there is something beautiful in a drove of fine fat cattle. Fowler's lot are a fine sight to look at. They have been admired by all who have seen them on the Fair ground. We ought to see more like them. Nothing makes a country look more rich and flourishing than fine herds of fat cattle grazing in green pastures. It shows that the county is capable of raising a surplus for exportation.

And here I will say a word or two about blooded cattle. There is one four year old Native in Fowler's lot. The others are a part Durham. Six of the three year olds are heavier than the four year old. This shows what improved blood will do in raising beef.

At the late State Fair I saw a Durham bull, two last spring, said to weigh 2,000. Another five year old weighed 2,300. But I would not advise you to introduce Durhams till you are provided with rich nature pastures and warm stables and yards. That is till you have converted your swamps into meadows, and your timber and stone into warm stables. Blooded cattle will not flourish on oak grubs in summer, nor beside straw stacks in winter.

Considering the unfavorable season, the display of fruit at the Fair is very creditable, and proves that fruits of the best varieties can be raised in this county. There is no greater luxury for the table, and no article of diet conduces more to health than good fruit. About a rod square of cultivated strawberries will supply a small family with

the most delicious fruit for a number of weeks in the spring. Then with a little attention the farmer can be well supplied with the raspberry and the cranberry in their season. By proper attention every farmer could have an abundant supply of apples, either dry or green, the entire year. In addition to the luxury of the article it is well worth the expense of cultivating them on the score of economy. Their free use will do more than all your pills and doctors to mitigate and banish the bilious fevers of the country.

I wonder that more attention is not paid to the cultivation of the grape. It grows to great perfection in this county, as the specimens on exhibition demonstrate. You can get a supply of the most delicious and healthy fruit from the grape in three years after transplanting. My vines which were only set out two years last spring, bore three bushels of excellent fruit this summer. I set them in warm, sandy loam, and have given them one dressing of swamp muck, and kept the weeds out. No fruit is superior to them for all use. All travellers bear testimony that in grape growing countries where wine is extensively made from the grape and freely used as a beverage, the people are more temperate than in other countries. On principles of temperance then we ought to encourage the cultivation of the grape, and the manufacture of pure grape wine in order to banish from our midst corn whisky, rum, ale, and other intoxicating drinks, which demoralize, degrade, debilitate, and impoverish those who use them.

Our social natures, and the courtesies of life, lead us to acts of hospitality, and to tender to our guests meats and drinks when they visit our houses; and if the pure juice of the grape and the currant were more commonly used, a man could take a social glass with a friend without danger of violating his principles of temperance, and the good house-wife could offer her guests a glass of home made

wine without the mortification of its being refused for fear that it might contain something that would intoxicate.

Nothing tends more to show the advancement and progress made by our agriculturists and mechanics than the labor-saving machines on exhibition at our late State Fair. There was the portable 10 horse steam engine, which could be removed from place to place wih two yoke of oxen, and could be attached to any kind of machinery. It consumed less than one-half cord of wood per day. There were numerous threshing machines of remarkable power and velocity competing for the first prize. What a contrast between the flail with which we pounded out fifteen bushels a day with pure human muscular force and a machine propelled by horse power which threshes its three hundred bushels per day! There were the celebrated Horse Reaper and Mower which took the first prize at the World's Fair at London, said to do the work of ten men per day.

There were straw-cutters, corn-shellers, and cider-mills of every variety and construction showing the skill and ingenuity of our people. There were horse power machines for planting and digging potatoes said to do the work of five men. Machines for hoeing, cutting up, husking and grinding corn. I am not sure that husking machines will find favor with the young men and maidens, as they will be deprived of the amusement of husking bees, and cannot any more claim the customary reward for the red ear found by the lucky swain or damsel. A cast iron corn-grinder cost only $25, said to grind 10 bushels per hour. There were horse powers ranging from one to ten. The two horse powers were light and portable, costing only about $65, and could be geared on to any machine used or needed by farmers. They could be used for sawing wood, shelling or grinding corn, cutting straw or corn stalks, threshing, cleaning grain, &c. I saw a two horse power threshing machine that would thresh over 100 bushels per day; the cost of the whole thing being less than $200.

And I must not forget to mention the beautiful and ingenious sewing machine which will do the work of ten ladies. With this machine sewing is a mere recreation—and here our young folks will see visions of departing quilting frolics, no longer to be enjoyed when this busy little handmaid of industry is commonly used as it is destined to be.

Now, farmers of Hillsdale county, what we need and what we must have, if we would be up with times, is more of these labor-saving machines. When the Almighty created man and placed him upon this earth, He created for his use beasts of burden, and gave him dominion over them. The inspired writer says of the first pair—"And God blessed them, and God said unto them be faithful and multiply and replenish the earth and *subdue* it, and have dominion over the fish of the sea and over the fowls of the air, and over every living thing that liveth upon the earth." And although at the fall of our first parents the Lord said "in the sweat of thy face shalt thou eat bread," still He did not take from man his dominion over the beasts of the earth. And He gave to man the promise of the Millenium; but we have no right to look for it until we have fulfilled the command in a material sense and replenished and subdued the earth. And we cannot do this until we assert our lawful dominion over the beasts of the earth and make them beasts of burden. For miscellaneous farming to be carried on by men of moderate means, I know of no county that can hold out greater inducements than Hillsdale county. Here running brooks grace our meadows and wood lands. Any quantity of stone for building and fencing are at hand. Timber is abundant. We have all qualities of soil from the richest loam to the lightest sand; and any quality of fertilizers lying in our swamps and marshes. We need not import guano, nor trouble ourselves about phosphorates, super-phosphates, or hyper-super-phosphates—our muck contains them all.

Do you long for the large stock farms of the western

prairie? There you are deprived of stone and timber, and near neighbors, and friends and schools for your children. Our neighbors of northern Ohio may excel us in the cheese and stock business, but they cannot raise our wheat; so the rich valleys of Southern Ohio, Indiana and Illinois may excel us in raising corn and fattening beef and pork, but we can excel them in wheat and wool.

What we need is to have our swamps and marshes converted into meadows and cornfields, pouring into the lap of plenty their bountiful stores, instead of spreading over the land a fruitful crop of chills and fevers annually. Then with our hills and dales interspersed with streamlet, lake and wood land, we shall enjoy one of the most beautiful as well as one of the most healthy countries in the world. And this is no imaginary picture. Many who hear me now will live to see it. I have seen since I have been in this county, now some thirteen years, one of the most entangled repulsive looking swamps on sand creek, converted into a beautiful meadow.

Although we have made great advancement in agriculture, still our numerous failures show the want of more knowledge. To supply the deficiency, we have established State and County Agricultural Societies, sustained partly by voluntary contributions and partly by taxation. In addition to these the State of Michigan has taken the lead in establishing an Agricultural College; which is now in full operation on a farm containing 676 acres, near Lansing, under the superintendence of Joseph R. Williams, a practical and scientific agriculturist. The State has already appropriated about $96,000 to the enterprise. It now accommodates about 100 students, three of whom are from this county. The course of instruction in this College includes the following branches: an English and Scientific course, Natural Philosophy, Chemistry, Botany, Animal and Vegetable Anatomy, Physiology, Geology, Mineralogy, Meteorology, Veterinary Art, Mensuration, Leveling and Po-

litical Economy; with Book Keeping and the Mechanic Arts, which are directly connected with agriculture, and such other studies as the Board of Education may from time to time see fit to prescribe. The College is conducted upon the principle of uniting mental with manual labor. The law requires full annual reports to be made of all experiments, improvements and discoveries, and copies to be filed in the office of each town clerk. It is expected that these reports together with the practical knowledge disseminated by the model farmers educated at this institution, will do much to enlighten the great mass of farmers in the science and practice of agriculture, and save them from the devastating losses now suffered by the fly, weevil, rust, and the numerous other evils and pests which now annually afflict the farmer and diminish his products.

So far we have examined certain material questions connected with agriculture; because man must be fed and clothed or the race will become extinct. And the more you develope the man physically, the more you can develope him intellectually. But all material questions are subordinate to the great problem to be worked out by the farmers, mechanics and laboring men of the nineteenth century, viz: How shall the great mass be fed, clothed and educated so as to combine physical labor with intellectual growth?

"A harmonious system of education," says J. R. Williams, "should so develope mind and body, that the vigor acquired by the one will act upon the other, and the hours spent in physical activity should so impress the mind with clearness and vigor, that the intellectual acquirements should be increased instead of diminished by labor in the field. There are scores of men whose distinction was acquired by mental application during hours snatched from avocations requiring the severest labors. The individuals who exhibit the finest physical and mental combination, are the soldier, the navigator, the merchant, the engineer,

and but seldom the professional man and the farmer. Generally the professional man is exhausted by too severe devotion to mental labor; while the farmer suffers from the want of educational advantages.

But the question is asked, how shall the farmer get time for intellectual cultivation? I answer, keep yourselves posted on the improvements of the age; harness your beasts of burden to the labor-saving machines, and thus do as much work in one day as you now do in ten. Be more sociable; visit together more; compare your experiments and improvements with each other; see what your neighbors are about; associate together and purchase machines too expensive to be purchased with your individual means; help the weak; fulfill the great command, "Love your neighbors as yourselves;" bear each others burdens, and bear with each others infirmities; cultivate the courtesies and refinements of life. Thus you will make a neighborhood desirable to live in. Do this for your material prosperity, if for no other reason. I know from my experience in selling land, that a farm situated in a neighborhood where the society is good; where families are sociable, intelligent and refined; where there is a good school house and church, will sell for twenty-five per cent. more per acre than in a neighborhood where vice and contention exists, and where the inhabitants are ignorant and unsociable. Such neighborhoods are shunned by the eastern farmer, who has the means, and wishes to buy an improved farm in the West.

Baw Beese and his tribe have left the county. The wigwam of the savage has disappeared. That roving population which hovers upon the borders of civilization, which subsists by hunting, fishing and the cultivation of a few acres of stinted corn and small potatoes, are fast following the footsteps of the savage. Their places are being occupied by substantial and thrifty farmers. And their huts are giving place to good substantial farm houses, occupied

by a class who intend to make Hillsdale county their future homes.

In conclusion let me say that the first business of the farmer should be to make his home pleasant to his family. Many farmers complain that their sons leave them as soon as they are old enough to be useful, and turn tradesmen, soldiers, gold-hunters, or anything but farmers. This is a fault which needs to be corrected, and the best way to correct it is to make your homes and your business more attractive. Do not make beasts of burden of your boys. Give them days of recreation, get up a matched team and let the boys drive it; surround your house with objects of beauty; plant out shade trees, in the yard and by the road side; cultivate flowers and running vines. They were given us by our Creator, to beautify our homesteads with. Supply your houses with good books and periodicals, and especially such as treat upon Agriculture, Horticulture, Floriculture, and Architecture. Encourage families of intelligence and refinement to visit your dwellings, but don't think it necessary to make slaves of your women to feed them. The cordial greeting, the hearty welcome, and the absence of restraint, display and formality, are the charms of social intercourse. Bela Hubbard, in his admirable essay on the proper improvement and enjoyment of country life, says:

"Let at least an acre around the homestead of every farmer that seeks a new home in our western land be undisturbed by the axe, except to remove what is useless. At least, let not the spot designated for the house be the first to be cleared of its noble growth of the old denizens of the land, whose place cannot be supplied within the life-time of their destroyer. The men who commit such outrages are misled by a false education. They have not learned how much of comfort, of health, and of true enjoyment, may be had from even a single fine tree sheltering a door-yard. They are ignorant that those monarchs

of nature, which they so unheedingly make war upon, are their best protectors against the fever burning sun and agueish dews. They are purifiers of the atmosphere from the miasmas that the clearings have engendered. They act as safe-guards from the lightning; they cool the fervid heats of summer by creating beneath their branches a refreshing breeze, even in a sultry calm, and at all times they delight the eye and cheer the heart of the true lover of nature. Why should the settler build his cabin away from the kindliness and protection of those natural friends of man."

When will our country homesteads be worthy of a song, such as those of another land have called forth from the most gifted of English poets—

> "The merry homes of England, how beautiful they stand,
> Amid their tall ancestral trees, o'er all the pleasant land."

Children should be taught to venerate trees and every thing beautiful. As much as possible they should be brought up amid scenes of picturesque rural beauty, multiplied and enriched, but not destroyed by art. They will derive from such scenes not merely a love of nature, but a taste for what is elegant and lovely, that will have a salutary effect upon their future life, and make them happy, contented and intelligent farmers, the true nobility of our country.

INGHAM COUNTY.

At a meeting of the members of the Ingham County Agricultural Society, held on the grounds of the Society, Thursday, the first day of the Fair, the following members were chosen officers for the ensuing year, to commence on first of January, 1860:

President.—Henry A. Hawley.

Vice Presidents.—Levi Rowley, of Locke; Geo. B. Fuller, Williamston; Thomas Humphrey, Meridian; Wm. A. Davis,

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ADDRESS

Delivered before the Ingham County Agricultural Society, by Hon. E. Lawrence, at Mason, Michigan, October 7, 1859.

GENTLEMEN :—

Progress is the law of the universe. The material world everywhere contains indubitable evidence of a slow, silent, but ceaseless progression. The earth is a vast volume, on every leaf of which is written in indelible characters, the mighty changes which have been wrought in its form and structure—a history written by the Almighty, which every man can read and understand. The vast layers of rock that underlie the present surface of the earth, formed one above another by the action of the elements and ceaseless motion, are so many everlasting truths, that point with unerring certainty, to the progressive formation of the globe. The alluvial soil with which the rocky strata is covered, is composed of the various rocky formations that preceded it. Every grain of sand that constitutes a portion of the present soil, has been washed from the solid rock; and every pebble on which we tread contains the history of the unknown and interminable past. The ridge or hill that skirts the grounds on which we are assembled, bears evidence, in the layers and formations of sand, gravel and

stones, of the action of water; and the very spot on which we now stand, teeming with choice flocks and herds, with the luxuriant products of a fertile soil, and with the presence of hundreds of happy human beings, was once the bottom of a mighty lake. Everywhere indubitable evidences appear, establishing beyond all controversy, that the great continent on which we live, for innumerable ages, was submerged in water; and the loftiest mountains and the lowest depths to which the human eye has penetrated, contain within themselves the eternal proofs of their gradual and successive formation.

The same law of progress is still operating in and upon the earth. The action of the elements is still effective and ceaseless, and daily before our own eyes, the earth is assuming a new and different form. The vast ranges of elevated rocks, thrown up by interior forces, in the earlier convulsions of the earth, furnish the materials for leveling and beautifying the surface of the globe; and the mighty rivers with their thousand streamlets, are constantly carrying within their channels, immense quanties of rock, worn from the solid mass, and depositing the sediment at their mouths, in the shape of bars or islands. The mighty oceans are being filled up, and the smaller bodies of water are being drained. Causes now at work must inevitably drain the inland seas, that now occupy so much space on this continent. If the constant dropping of water will wear away the solid rock, so sure will lake Erie become a vast plain, with its present breadth of water circumscribed to a navigable river; and the immense bodies of water above it will eventually share the same fate. And should history fail to record the event, in after times, thousands assembled on those plains for a purpose similar to this, may wonder, like ourselves, at the fearful changes that have swept over the face of the globe.

Geology conclusively shows that the earth has been the product of progressive operations; that from a gaseous or

igneous condition, it has gradually advanced to its present form of structure. After the mineral or rocky substances became sufficiently modified by the action of the elements then in existence, and the atmosphere sufficiently refined and congenial, vegetation appeared, and various kinds that now are not found on the earth, once spread over its face, and having accomplished the end for which it was intended, it melted away into the coal beds that now diversify the surface of the earth; and thus gave place to a new growth, made proper by the decay of the former, and thus from age to age, one kind of vegetation has arisen on the decline of another, until the present known vegetable world spread its ample and beautiful folds over the face of nature. What a great and glorious progression! the rough and rugged rocky structure by invisible but invincible agents has by the fiat of the Almighty been converted into the vegetation that now covers the earth with its varied and matchless beauty—the unerring prophecy of greater and higher developement of animal life.

The same law of progression has controlled the animal races. At first, uncouth and comparatively ill-formed animals pervaded the earth. Race after race became extinct, as the natural exigencies of the time and climate and perfection or developement of the earth required, and each succeeding race being an improvement upon that which preceded, as the extinction of every race furnished material for the higher, until the present species of animals were brought into existence by precisely the same laws of progressive developement, that originated and created the first atom that composed the earth's structure. Thus we see how beautifully, consistently and harmoniously one of a lower origin or kind is made to give way to the higher, and by the very fact, laying the foundation for superior existences.

As the present race of animals could no more have existed without the extinct races having first appeared, than

the present vegetable world could have flourished, without the defunct vegetation having preceded, and laid the foundation for its subsequent growth and beauty.

Thus we see everything connected from the lowest to the highest, and from the highest to the lowest, and combining and concentrating everything in the Great Author of all things.

Intellectually, the same progression is clearly perceptible. The early ages of man's existence form the lower strata of human wisdom; and from these have arisen the intermediate gradations of knowledge, each combining the portions of the anterior, until we have arrived at the present state of science and learning. The intelligence of the present age is the alluvial soil in the progression of human knowledge. Without the wisdom of the past, present knowledge could not exist. Our notions and opinions, our science and literature are based on those that have gone before us, and the admixture of the present earthy soil is not more the indices of the various formations of the earth, than the civil and religious views of men at the present time, are the combinations and emanations of the wisdom which has preceded them. Every age furnishes its materials for the grand structure which has been erected, and our own will be the basis of future advancement.

The intellectual development has not been uniform over the face of the earth. As portions of the globe are still covered by the waters of the deep, and vegetation has not yet shown itself, so in many nations the progress is hardly perceptible, but like the bed of the sea, when properly circumstanced they contain all the elements necessary for future development.

Governments are the indices of a nation's political development; and the same progression is observable in govermental knowledge as in all other. Had not the various forms of government existed which have controlled

the nations of the past, our own Republic would still be unknown and unenjoyed. It was from a knowledge of benefits and evils of preceding forms of government that our own sprung into being. A Republic is the highest and most enlightened form of government known among men. It could never have existed if despotisms, monarchies, and limited governments had not preceded it. It naturally and inevitably arose upon the governmental foundations previously laid. The enlightenment of its authors gave it the form of the highest development, basing their knowledge upon former precedents. Thus we see in the world of mind as in the world of matter, there is a natural and necessary connection, between the lowest and highest, and that progression is the great law controlling and regulating them all.

We live in the nineteenth century, with the highest conditions of matter and mind that the world ever saw. Every revolution of our globe, since it began to whirl in space, has increased its refinement and beauty; and every thought that has emanated in the human soul since man's existence on the earth, has contributed to the knowledge and enligtenment that now prevail. The present condition of the earth, and of the human mind is the simple manifestation of the great and eternal law of progression.

We live, too, in a country vast enough for a hundred empires; with every variety of climate and production—with resources unnumbered and inexhaustible, we have a government, which in the beauty and symmetry of its proportions is unequalled by any model of ancient or modern time. We are a people, such as the sun never before shone upon, composed of every enlightened race of the earth, with a freedom before unknown to men, and with the combined and concentrated wisdom of the ages past, the American people by the inevitable laws of God, are destined to enact the most important part ever yet performed in the drama of human existence. With such a country, govern-

ment and people, who shall undertake to set limits to its advancement, or who shall dare portray its manifest and inevitable destiny?

But the progress of the past, whether in the earth's rocky tablets, or in the intellectual and social conditions of men, has been uneven and fragmentary. Nations have risen to high degrees of excellence in some department, and then retrogressed. Greece excelled in sculpture and eloquence; Rome, in patriotism and bravery; other nations, in philosophy and ethics; but like the waves on the flood tide of the sea, although one after another breaks upon the shore, and then recedes, yet the mighty mass continues to rise higher and higher.

This nation, the last born—the child of all that have preceded it, is destined to behold the concentration of all these fragmentary excellencies, and unite them in one grand composite national life—the very culmination of present human greatness.

In such an age, and country, we have here assembled, citizens and farmers, to exhibit the products of the soil, and the improvements in our flocks and herds, to behold the useful discoveries which genius and art have made, and with a friendly emulation, commune over the progress of our country's husbandry. The advancement which agriculture has accomplished in our time, will be most apparent by a reference to its condition in former periods.

In the early history of the human race, it is regarded as highly probable, that the earth's inhabitants lived upon the spontaneous fruits of the earth, or gained a precarious subsistence by the chase. Property in land had not then entered into the judicial code of our ancestors; but that present necessity of inclination was the only established principle of *meum* and *tuum* in regard to real estate. That the broad expanse of nature was then sparsely occupied, or not at all, and that present want was the only rule of right. Hence, the patriarch of old said to his kinsman,

when their substance had greatly increased, "Let there be no strife, I pray thee, between thee and me. Is not the whole land before thee? Separate thyself, I pray thee, from me. If thou wilt take the left hand, then I will go to the right; or if thou depart to the right hand, then I will go to the left." Plainly indicating that the country was unoccupied or unowned, or that the spirit of land piracy dates its origin far back in antiquity. As the earth became more thickly inhabited, and the spontaneous fruits less sufficient, and the pursuits of the chase more uncertain, it is reasonable to suppose, that a pastoral life, and a rude kind of agriculture succeeded. But men did not, all at once, devote themselves to husbandry.

Then, as now, the Nimrods of the land, could scarcely yield the pleasures and excitements of the chase, for the more staid and sober drudgery of the plow. They undoubtedly preferred the occasional risk of starvation to the toil of steady industry. A striking coincidence between the hunters of the former and present time! At length, when the earth became more densely populated, and convenience as well as necessity required improvements to be made, such as the digging of wells, and the erection of permanent tents, the right of property may have been claimed, or maintained by occupancy. And this possession being transmitted from father to son, the right of property in the soil may have thus been established by common consent, or more likely by force. When men became permanent owners of the soil, and had partially or wholly abandoned the chase, rude conveniences would suggest themselves even to the uncultivated mind, and necessity, the stern mother of invention, would stir up their unpracticed geniuses to efforts of uncouth and primeval art. One want gratified soon begets another, and practice and experience soon gave additional skill to these aboriginal artists and husbandmen. Thus for successive ages, the knowledge of husbandry was extremely limited,

and did not always save the inhabitants from famine and starvation.

The first notice of agriculture is contained in the writings of Moses. Cain is represented as a tiller of the ground, and Able as offering in sacrifice "the firstlings of his flocks," and it is written that "Noah began to be a husbandman, and planted a vineyard." Husbandry was held in high esteem by the Phonecians and Egyptians.

The latter attributed its origin to superhuman invention, and expressed their gratitude in the absurd adoration of the ox, for his services as a laborer. A similar sentiment prevails in this fast age, not indeed in the adoration of the ox, but in the extraordinary worship of the horse. Some men are at least half horse, and, if it be true, as claimed by some, that our employment in a future state of being will be in accordance with our highest wishes, it seems to me, that many a worthy jockey will be entirely without employment, unless there be reserved for him a kind of horse heaven. The Carthagenians excelled contemporaneous nations in their agricultural knowledge; and one of their famous generals wrote twenty-eight volumes on agricultural topics, which were translated into Latin by the express decree of the Roman Senate. The Greeks and Romans have furnished many authors who, in the elegance of their language, and in the harmonious numbers of their metric song, have commemorated the labors of the husbandman. The implements used by the ancients in husbandry were exceedingly uncouth and simple. Hesiod, the cotemporary of Homer, gives a description of the plow as used by the Greeks, consisting of three parts—the shore-beam, the draught pole, and the plow-tail. According to the same authors, their ground received three plowings, one in autumn, another in spring, and a third immediately before seeding. Six different kinds of manures were known and applied. The sickle was the instrument of honesty, and the grain was bound, threshed and cleaned

in the wind, and stowed away in chests and bins, until taken out and pounded in a mortar for family use.

The Romans paid great respect to husbandry, and its devotees were held by them in the highest veneration. In the earliest and purest days of the republic, no greater commendations could be given to a distinguished character, than to say of him, that he was an industrious and judicious husbandman. Cato, the Censor, after having held the most important offices of Rome, obtained the greatest and most enduring praise by writing a volume on agriculture. Cincinnatus was called to the highest dignity of the State from his rural retreat, and the messengers who bore to him the resolution of the Senate, conferring on him the Consulship found him in his field, holding the plow with his own hand.

Thrice was he thus called from his retirement to assume the highest power in the State, and always discharging his duties with ability and success, was revered as the father of his country. The implements of husbandry used by the Romans were numerous, but imperfectly described, and are more worthy of the notice of the curious antiquarian than the practical cultivator. Fallowing the ground was the almost uniform practice preceded by a year's crop. Manures were used very similar to those of our own time. Pigeon dung was regarded as the best, and night-soil next in value, corresponding with guano, and poudrette of modern days. They did not bind their grain, but sent it to the area, where it was threshed and separated from chaff by throwing it from one part of the floor to the other. Virgil in his Georgius, recommends the feeding of grain while young to prevent its lodging, and also the practice of irrigating the parched field, by conducting water from the neighboring hills, by means of numerous channels. The importance of thorough tillage is illustrated by the following apologue :

"A Vine-dresser had two daughters, and a vineyard; when his eldest daughter was married he gave her one-third of his vineyard for her portion, notwithstanding which, he had the same quantity of fruit as formerly. When his youngest daughter was married, he gave her half of what remained; still the produce of his vineyard was undiminished. This result was the consequence of his bestowing as much labor on the third part left after his daughters had received their portions as he had been accustomed to give to the whole vineyard."

After the fall of the Roman empire, agriculture declined, and during the numerous wars that succeeded, more attention was paid to the pasturage of flocks and herds, as they could be more easily removed at the approach of an enemy.

Little progress in agriculture had been made in England until after the Norman Conquest. The northern clergy, and especially the monks, paid great attention to the cultivation of the land in the vicinity of their abodes, and it is said that the famous Thomas A. Becket, after he became Archbishop of Canterbury, was accustomed to go into the field, and assist with his own hand in reaping grain, and making hay.

During the reign of Henry the Eighth, the first book on husbandry was published in England, by Sir A. Fitzherbert, Judge of the Common Pleas, and contained directions for draining, clearing, and enclosing a farm, for enriching the soil and fitting it for tillage. It strongly recommended the use of lime, marl and fallowing. From that time to the present, there has been a slow but constant progress in the art of agriculture. Century after century may have passed, adding but little to former knowledge on the subject, until the light of modern Science, bursting forth in all its power, has thrown an illumination and glory over the field of the husbandman, the arts of the mechanic, and the comforts and luxuries of life, that the world never be-

fore saw. It has made that certain and invariable which before was occasional or accidental. It has discovered, by analysis, the component parts of vegetables, minerals and animals, and, with a precision, almost beyond belief, has been able to determine the quantities, or ingredients, which constitute all material things. It has unlocked the secrets of nature and thrown wide open the doors of creation.

The husbandman of antiquity, or of the middle ages, had no correct, practical or theoretical knowledge of the sciences of Geology, Mineralogy, Chemistry, Botany, or Vegetable Physiology, and was an entire stranger to the elements, agents and principles which guide and enlighten the modern agriculturist. His precepts were based on his experience, but the rationale of his practice was inexplicable. He was unacquainted with the causes of the most simple operations of nature, and from his ignorance frequently miscalculated as to effects. He was experimenting in the dark, with no guide but chance, and no success but accident. He was not carrying out great and certain principles, which had been brought to light, but was groping at random, amidst the rubbish of the past, to find something that would aid him in his pursuit. Ignorant of the simplest principles of nature, without any knowledge of the various elements which constitute the physical world, he was content with the knowledge of his father, or failed in his own efforts to advance.

But the triumphs of science have opened a new world to the husbandman. They have pointed out the means which nature uses in the growth and development of the vegetable and animal kingdoms. They have shown the constituent parts of the soil, and its applicability to the production of plants. They have made a chart, by referring to which, every man may find a true and faithful guide to the principles by which nature rears her productions. They have shown that there is an adequate cause for eve-

ry effect—that not a drop of rain or dew moistens the earth—not a plant starts from its germ, or produces its kind—not a tree puts forth its blossom, or grows its fruit—not a flower assumes its beautiful tints, or spreads its delicious fragrance, not a blade of grass or corn, springs into being without eternal and unalterable law.

These discoveries in science, unknown to the ancients, have thrown over modern agriculture a charm and interest that never before existed. Instead of being the work of chance, or accident, it is now susceptible of definite and certain results. The intelligent farmer, from a knowledge of his soil can foretell the character of the crop. If there be a deficiency in any respect, he can apply the remedy. So that modern farming is a matter of scientific certainty. There need be no mistakes, no disappointments, no grumbling at the dispensations of Providence. The law is as sure as that by which the Almighty works.

This is a vast progression in the art of agriculture, and must lead to an augmentation of agricultural products commensurate with the greatest increase of population. No fears need be entertained of the earth's becoming overpeopled. There is no more danger that the earth will be unable to supply a sufficiency, than that the heat of the sun will fail, or that the air will not be sufficient for respiration. The raw materials—the means of improvement are exhaustless. The capacity of the earth is fully equal to all the demands that can be made upon it. It was intended for man's subsistence, and there has been no failure in the calculation. The doctrine of Malthus, that the earth would not be able to sustain an increased population, was based on the imperfect knowledge of agriculture that then existed. The argument might have force, if there was to be no improvement in the cultivation of the earth. But its susceptibility of improvement is limitless. Increased population will only be the means of increased production. The application of labor will always produce

corresponding results, and the more labor, the more products.

The means for enriching the soil, and making the earth more productive are numerous and inexhaustible.

The mineral and vegetable fertilizers are found in vast abundance, and the more products, the more stock can be sustained; and the more stock the more manure; and the more manure, the more produce—so that every advancement in the quantity produced is the assurance of a still greater, thus showing that progression is the law that controls the products of the earth as well as its formation.

But no advance can be made without labor, physical and mental. Although the earth contains all the essentials for its increased fertility, and means are placed within our reach for its progressive products; yet the labor of man is required to make it yield its inexhaustible supplies. Labor is the agent, the principle by which the earth's spontaneity is to be perfected—the modifier and regulator of the earth's fertility—the life of improvement—the soul of successful cultivation. The earth itself is constantly laboring to refine and develope its constituent particles. Its chemical action, its attraction and repulsion, its electrical and magnetic operations, its daily and yearly revolutions, its constant and ceaseless motion in the orb of the Universe, all tend to its refinement and perfection. Labor is the law of creation, the fixed and unalterable price of all progression.

Physical labor strengthens and develops the human body. The infant, when not lulled into repose, is full of motion, every muscle, bone, and nerve is constantly in action, even without effort, involuntary motion is constantly exercising the organs of the body. The nurseling soon develops itself into the joyous youth, full of hope and ceaseless activity. The youth soon works himself into strong and vigorous manhood. And man, by exercise and practice, becomes a giant in physical strength, exceeding all the low-

er races of animals in the power of his bodily functions. Mentally, there is the same wonderful progression. The child, who barely knows enough to receive the food necessary for its subsistence, whose mind is without thought, and like a blank sheet of paper, merely susceptible of impressions, soon by exercise and industry becomes learned in all the knowledge of men, grasping within its folds the profoundest principles of science, fathoming the depths of the earth, and ascending to the gorgeous heavens, portraying with equal certainty, the gradual formation of the earth in the ages past, and the distances, and revolutions of planetary systems, wheeling with unerring precision in the endless round of infinite space.

Yet with all these advantages, and manifest laws of nature in favor of labor, there are those among us who affect to despise and sneer at honest industry. A kind of mushroom greatness; codfish aristocracy, based on simple wealth —a reputation gained without merit, and lost without a crime—an affectation of the real without any of its virtues —has sprung up among us, which in the language of another, "glories in its own shame."

The laborer endeavoring to reclaim the barren fields, or improve the fertility of the earth, the laborer who toils in his strength, will admit in the erection, or the completion of some useful work of art, instead of being an object of contemptuous scorn, is in truth one of nature's noblemen, a co-helper of the Almighty himself in beautifying and developing the earth.

True republicanism dignifies and exalts labor. Freedom cherishes and honors the industrious. Virtue and morality claim him as their own. The drone in society is a fit subject for prisons and the scaffold. The idler is the Devil's delight.

Having thus attempted to show some of the principles which govern the earth and its successful cultivation, the inquiry naturally forces itself upon the mind, what is the

object and aim of these grand and universal laws of progression? For what was this globe which we inhabit made? Why have vegetables and animals lived and disappeared? Why do the present vegetable and animal kingdoms exist? Why does man stand upon the earth, and why are we assembled here to-day? Why does the sun give us his light and heat? Why do other solar systems revolve, and why was the Universe of God itself created? I answer, for the production, individualization, and development of the human soul—the highest from the lowest, the acme, the climax, the culmination of all terrestrial progression.

If this vast outlay, if this enormous expenditure has been increased by infinite wisdom—if this stupendous investment of a Universe has been made for the production of the human mind, who shall estimate the value of the product? Who will set a price on the human soul? If then, the thinking part, the interior man be the product of all products, the object and aim of all progressions, what, I ask you, shall be the cultivation of the soul itself?

Who shall prescribe the best method of its growth and development? What aids, if any, shall be introduced in its culture and perfection? These inquiries are best answered by another. What was the object of the creation of the human mind? I answer, "happiness is our being's end and aim." Whatever is promotive of the mind's enjoyment is a part of its culture. The social character of a people is the surest and most reliable evidence of their moral development, and real happiness. The social systems of the world are the products of the soul's progression and cultivation. They are the practical manifestations of the mind's advancement.

Politically, our government acknowledges the rights of man, to the fullest extent; but in a social view it falls far short of his great and righteous demands. This undoubtedly arrises from the peculiar state, or condition of its founders, as they felt the stings of political poison, more than

the inconveniences of social degradation. Their minds, accustomed to the rude and unjust oppressions of their civil rights, had not yet learned to contemplate, with the same degree of accuracy and discrimination, their social condition. The illumination which spread over their political horizon had not yet reached the errors and absurdities of their private relations. They felt strongly incensed, and deeply grieved at the prospect of losing what their political wisdom convinced them was their own; yet they had indulged no distress for the greater loss of social right, which not understanding, they had not yet learned to appreciate. But the time has now arrived, when their posterity not only appreciate but highly value those inestimable social relations which will eventually prove so conducive to the harmony and happiness of mankind. It is vain to expect results commensurate with any given object, without corresponding efforts to produce the effect. Wisdom without action, is like life without the power to move. Desire without the means of accomplishing it, is like money without value. The social relations of men are much better understood than at the revolutionary epoch, and measures for the consummation of their successful and beneficent results must necessarily devolve on the present generation. To men now upon the stage of existence, is presented the problem of solving the great question, of conferring the greatest happiness on the greatest number, by means the most simple, and the most decisive. This problem, difficult and perplexing to the social mathematicians of former times, admits of an easy solution to those versed in the wants and desires of men, at the present day. History furnishes no clue to the successful solution of this magnificent proposition. Science has no precedents, or formula, by which its solution can be wrought. History has contemplated only the actual occurrences of the human race, in their social and manifold conditions, or circumstances. Science has meditated and

expounded only on given conditions, or forms ; but truth, the great and inestimable explainer of all things, finds a ready solution in the hearts and conduct of men.

The social virtues have been limited to an interchange of unmeaning and useless civilities, and compliments, without the substantial and beneficiary appliances for the amelioration of the race. Truth and right suggest the easy, though as yet unthought of, but much talked of method or plan of simply doing as you would be done by. This simple maxim is the key to unlock the abstractest and most difficult proposition which the world of science and learning has yet failed to unfold. Practically they know little or nothing of its glorious and hallowed working, among the families, or conditions of man. They have never contemplated the just and appropriate method of eliciting the happiness of all, by contributing to the wants and comforts of the needy and oppressed. The remedy, like much of truth, is so simple, that it has entirely escaped the imaginings and fancies of studious minds. The simpleness of the remedy has been partially, if not wholly obscured by the desire to accomplish great results only by extraordinary and unheard of means, when simple and wise measures alone achieve great results. The social condition then of men can easily be raised to a level with their political condition by instilling into the public mind the necessity of doing as they would be done by.

The practical application of this simple remedy will accomplish more than all the theories of the congregated wise men of the Universe. Here is the key to the solution of this vexed and difficult problem, which when solved will throw a halo of glory around its authors and practitioners, as never before adorned the brow of any human being. The glory thus acquired will be far superior to that of any hero, or sage that hitherto has appeared on the face of the earth; and blessed will be the name of

him, who shall induce his countrymen to first introduce a system of social relation among his fellow men, that shall be founded upon, and acting on the simple proposition of loving thy neighbor as thyself. Angels and men will bless the day, and call him sacred, and glorious, who shall thus pave the way for greater and higher progression to the children of men.

The imperfections and inconsistencies of our social relations are numerous and important. Hardly any phase of human society can be presented to an uninterested and intelligent observer, without the easy discovery of defects and inequalities that mar the beauty of the view. Society in its present form exhibits a state of strife, contention and warfare, unnatural and unwise. Interests, competitive and antagonistic are fostered and cherished by the forms and fashions of the present social system. Selfishness, perverted and misdirected, governs and controls the conduct and business of men. Wisdom and goodness, love to man, or love to God, constitute little, or no part of the transactions of the present time. Self-interest, as it is termed, though never was there a greater misapplication of language, seems to be the Alpha and Omega, the beginning and the end, of human existence. The *meum* and *teum*, mine and thine, are the great and holy watchwords of a vast majority of men. It has never yet entered the thoughts of many rational beings, that higher interest, and holier purposes are spread before the race, for their choice or rejection, than the pitiful and abject engagements, and exclusive monopolies of brutal instinctive aggression. They have never once dreamed that they are living and acting on a more exalted plan of being than the animal creation. They have never yet thought that they were men, placed here with high hopes, and indefinitely expansive minds, destined to rise in the scale of being to an endless and boundless infinitude of enjoyment and comprehension—they have never once fancied themselves the off-

spring, the very sons and daughters of the everlasting God, but have been content with driveling and dabbling in the most abject and least developed combination of their nature, thus expecting to realize happiness and great enjoyments on a foundation too low, and inconsiderable for the display of those mighty powers, and wonderful achievements of which man naturally is the possessor and author.

Society, we say, as at present formed, is competitive and antagonistic. Each man's supposed interest is at war with his neighbor's. The true and undeniable interest of the whole community, as a body, is entirely forgotten and neglected, in the general scramble for the successful accomplishment of individual aggrandizement. Thus, professional and other interests constantly clash in their common exercise. It is the interest of the physician that disease and death sweep over the land; of the lawyer that litigation and strife embroil neighborhoods and communities; of the clergy that sorrow and mourning should mantle the altar of peace and righteousness; of the laborer that the prices of provisions should be low, but of labor, high; of the farmer, that his products should be at an advanced rate, and labor at a reduced figure. Thus antagonism and opposition are the foundation of the present social system, and the great and true interests of the community at large frittered away in individual contention and competition.

Co-operation and friendly aid, in the necessary pursuits for the sustenance and comfort of the race, are entirely lost sight of in this pandemonium of individual strife. Of course, in such a warfare, what would be the results, except those we daily see? Here resides a lordly magnate, and scarcely beyond the shadow of his magnificent abode lives a poor laborer, whose unpaid toil has contributed to his neighbor's wealth, helpless, faint, and starving. Here lives a wealthy physician, whose elegant and costly dwelling is reared on the sighs and tears of widows and orphans. Here dwells the smashing, lawless attorney, whose briefs

and pleadings have robbed and beggared neighborhoods, by cherishing the spirit of strife and making a fool of everybody but his own pockets. Thus, through the whole catalogue of professions and employments. The unprincipled and crafty gain undue advantage over the honest and unsuspicious. The interest of a physician, under a just and proper organization of society, would be the interest of the whole community, and instead of having occasion to complain that the times are distressingly healthy, his design and ambition would be to prevent disease and distress, by imparting his superior knowledge to the people, of their causes, and the means of prevention. The lawyer's true interest would be in accordance with the real happiness of his fellow-men, and instead of secretly rejoicing at the prospect of a general quarrel among able and generous clients, his duty and pleasure would lead him to instruct others in their legal and equitable rights, and to act as a pacificator and umpire when misunderstanding or disagreement might possibly arise. Thus with all classes of society, each could find ample employment in administering to the wants of others, thereby contributing to the general welfare, and at the same time enhancing their own happiness.

The present social system is based upon an imperfect comprehension of the true interests and real happiness of mankind. It seems to be founded, if, indeed, it has any foundation, other than accidental, upon the supposition that if every man be left to his own efforts, and own inclinations, the result will be the greatest good to the whole. This might be of general benefit, if every man understood his true interests and practiced them, but the great difficulty in the system is, that men have egregiously mistaken the sources of happiness, by supposing that mere selfish aggrandizement alone would secure the desired end. They have supposed that if they were themselves successful in amassing wealth, or obtaining honors above their fel-

low-men, they would secure, in the same proportion, their individual happiness; but all experience has proved the utter fallacy of all such imaginings. Wealth and honors, station or place, have ever failed to produce happiness, but generally have brought with them additional cares and perplexities. It is then misconception of the sources of happiness, that has tended to produce the present state of society, and nothing but more just and righteous views of man's interest and destiny will ever elevate his condition and the forms of the present social system.

Practically, the present social system has only tended to produce inequalities and disparities totally incompatible with the true interest and elevation of the human race. In its highest and most enlightened forms, where it has had the most essential requisite for its perfect development, and the fairest field for its most successful and triumphant operation, it has failed entirely to realize its high pretensions, but has ignominiously ultimated in producing inequalities and disparities in the condition of men, that are in vain sought for in less civilized communities, so that even savage or barbarous states of society far exceed that of civilized nations in the culture and protection of the true and essential interests of man.

The natural impulses of the human heart, the love for one another that dwells within the human soul, have been stifled and smothered by the artificiality and disunity that prevail in more refined nations. The supercilliousness of indolent wealth, and the reckless criminality of extreme poverty, have been naturally and prolifically engendered by the conditions and requirements of social systems among refined nations. This disparity and inequality have become so great, that one class of community pride themselves on their superior blood and noble birth; while another, so long enslaved, are willing to acknowledge their pretensions and confess themselves of an interior origin in the scale of being. With the bountiful provisions of na-

ture far exceeding the wants of the whole human family, and with the means of indefinitely extending those productions, at the same time and in the same nation, one class is luxuriating in super-abundant plenty, and another class actually perishing for the want of the poorest and and coarsest sustenance. One class is degenerating in wealthy inactivity and sloth, while another is exhausted and degraded by intolerable and deadening labor.

The social relation now existing between man and man much resemble the condition of the colonies of this country before the confederation. Their seperate interests, and individual wants were the same, but without concert and unison in accomplishing one grand design, they were liable to lose the object of all, in the disagreements and contentions of each. They, therefore, in accordance with the loftiest dictates of wisdom and philosophy, sacrificed something of individual independence and power, to national glory and safety. They wisely perceived, in a political point of view, that the strength and safety of the government—that its means of accomplishing good to the whole community, consisted in its union and common design. So in the social world, individual interests, true happiness to all, can be secured only by individual effort and contribution to the common prosperity. But as in the case of our own government, individual or State concessions, to their respective governments, instead of really taking away anything from the State, have permanently and gloriously secured the common and individual interests of the whole. So, in the social relations, the concession of individuals to the wants and interest of the whole, instead of diminishing the happiness of the individual, only enhances it, by the improved enjoyments and comforts of his fellow men.

In politics, or in governments, we easily perceive the wisdom of union of individual efforts, for a common purpose, and readily concede something of individual prefer-

ences for the general result, and never once dream that by so doing we have at all lessened our individual rights or interests. Why, then, can we not discover in regard to our social relations, the same great principle of individual union? Why can we not perceive that our own security and happiness are as much enhanced in one case as in the other? Why can we not understand, that if love to the neighbor in politics, accomplishes good results, it will also have the same effect when applied to our social relations?

Already, has this principle been partially put into practical operation. The asylums, hospitals, and free institutions of benevolence and learning, with which the civilized nations of the earth are adorned, are so many practical exhibitions of the great principle of loving thy neighbor as thyself. These, however, have been the product of the most developed and progressed minds, whose attention has been strongly attracted to those extreme conditions in society, in which a remedy was imperiously demanded. States and communities have, thus, more or less become acquainted with the wants of their citizens, in those extreme cases, which are more apparent among the numerous defects of the present social relations, and to an honorable extent have justly endeavored to provide an appropriate remedy. A vast field of human misery is, however, yet unexplored, and unprovided for. Disastrous effects have been witnessed, and partially mitigated, but the causes of evil are scarcely thought of, much less fully discovered and defined; and the remedy as yet practically sleeps in the human breast, like the blossom of the flower, in the foldings of its bud.

But let individuals, like States and communities, seek out the objects of want—let the individual as well as the public mind be directed to the discovery and remedy of the present defects in social life—let the principle of loving thy neighbor as thyself have its proper influence in the human mind—let the laws of nature, the instincts and in-

tuitions of the human soul be properly developed and obeyed, and the morn, which now is imperceptibly, though faintly dawning upon the condition of the oppressed and down trodden, will arise into an immortal day, spreading its hallowed illumination over the face of the earth, making the desert a cultivated field, and the wilderness blossom like the rose.

Our fathers performed their part well, in the drama of human life. They achieved the highest glory in the acquisition of political science, and exhibited to the admiring world a plan of government, in the equality of its forms, and benignity of its principles, hitherto unknown and unenjoyed by men. They marked out a new era, in the political affairs of the race, and raised a standard of high development in governmental progression, that will yet wave, with its ample folds over the nations of the earth, wide spreading its glorious insignia, and affording protection and peace to every sea, and every land. With grateful hearts and determined minds, let their posterity cherish and adore the works of their fathers—a gift never before vouchsafed to man—an inheritance, such as country never before conferred upon her sons. Thankful for, and justly proud of the past, let them, too, rise in the power of their might, and shake off the shackles of social thraldom, and individual bondage, uniting to political freedom, social happiness, and combining, in the same people, and the same country, the two greatest discoveries of this, or any other age, the inalienable rights of man, and the true pursuit of happiness. Let them protect, nourish and defend the inestimable privileges which the revolution achieved; and while enjoying and transmitting to coming time, the blessing of political freedom, let them gently and peacefully entwine with their own hands and hearts, a newer and nobler wreath of glory, around their country's brow, of peace on earth, and good will to men.

SECOND NATIONAL EXHIBITION OF HORSES AT KALAMAZOO, 1859.

To R. F. Johnstone, Esq., Sec'y of the Mich. State A. S.:

The undersigned beg leave to report the following proceedings of the Kalamazoo Town Agricultural Society, for improving the breed of horses, for 1859—Second National Exhibition, Oct. 11, 12, 13, and 14:

Receipts for entries,		$1,055 00
" tickets,		2,122 46
" subscriptions,		621 00
" rent stands,		227 50
Total,		$4,026 01
Amount paid for premiums,	$2,802 00	
" for expenses,	900 00	
		$3,702 00
Balance cash on hand,		$314 01

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LIST OF PREMIUMS

Awarded at the Second National Exhibition of Horses, at Kalamazoo, Mich., October 11, 12, 13, and 14, 1859.

CLASS I.

No. 96. J. S. Kellum, Detroit, 'Capt. Buford,' thorough bred, 6 years old, 1st premium, ... $200 00

No. 4. Thomas Williams, Kalamazoo, 'Stone Plover,' thorough bred, Eng., 9 years old, 2d prem., 100 00

The committee regret that with reference to four other horses entered in this class, the pedigrees submitted were not clear enough to entitle them to consideration as thorough breds—one or more links are wanting in the pedigree of each to make them perfect.

Committee—Edward Parsons, A. Rogers, N. H. Osborne.

CLASS II.

There was only one entry in this class, to wit:

No. 14. F. E. Eldred, Detroit, 'Jane,' thorough bred, N. Y.

The committee upon examination find that there is a link out in the chain of this animal's pedigree, as a thorough bred. Although she may be of pure blood, your committee cannot give her a premium as such. We think her a fine animal, and recommend the award of a discretionary premium.

Committee—Edward Parsons, N. C. Ward, John Davis.

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CLASS III.

No. 51. F. V. Smith, Coldwater, 'Magna Charta,' Morgan and Gray Eagle, Mich., 1st premium,.. $150 00

No. 21. L. W. Smith, Battle Creek, 'Pr. Charles,' Black Hawk, Vt., 2d premium,..... 75 00

Time of 'Magna Charta' to 1st qr. pole, 39 seconds, to hf. mile pole, 1.15.

Committee—M. E. Crowfoot, J. T. Smith, C. S. Mack.

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CLASS IV.

No. 131. John Gale, Wis., 'Bucephalus,' Black Hawk, Vt., 1st premium,..... $150 00

No. 105. J. J. Wise, N. Y. City, 'Mohawk,' Blk. Hawk, N. Y., 2d premium,..... 75 00

Committee—A. Rogers, S. Warren, A. J. Bass.

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CLASS V.

No. 9. L. Downs, Marshall, 'Mogul,' Messenger, Mi h., 1st premium,..... .... $100 00

No. 81. E. N. Rising, Richfield, Mich., 'Young Victor,' 2d premium,..... ..... 50 00

The committee have no hesitation in saying that the horses entered in this class combine in a very large degree all

the qualities that go to make up a perfect animal for general use, and they congratulate the breeders of horses for general use, that so large a number of stallions possessing the qualities they desire are within their reach.

Committee—Edward Parsons, N. H. Osborne, S. Warren.

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CLASS VI.

No. 52. S. M. Seeley, Coldwater, 'Senator Black Hawk,' Blk. Hawk, Mich., 1st premium,..... $ 70 00

No. 142. D. B. Hibbard, Jackson, 'David Hill, jr.,' Blk. Hawk, Ohio, 2d premium,..... 35 00

Time of 'Senator,' 1st heat, 2.56; 2d heat, 3 01.
" 'David Hill, jr.' " 3.02.
" 'Rob Roy,' " 3.02.

Committee—F. O. Chamberlin, J. Atherton, N. H. Osborne.

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CLASS VII.

No. 28. B. F. Tody, Charleston, 'Young Messenger,' 1st premium,..... $ 50 00

No. 37. C. N. Merriam, Crete, Ill., 'Jimmy York,' Blk. Hawk, 2d premium,..... 25 00

The committee, after a thorough examination, award premiums as above. The entries were numerous, and the colts all No. 1. They desire to notice particularly a black colt—entry No. 92, belonging to H. M. Wright, Coldwater, and also a bay colt—entry No. 77, owned by P. C. Lown, Florence, as very superior animals.

Committee—J. Milham, S. Warren, J. Atherton.

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CLASS VIII.

No. 20. S. Warren, Mentor, Ohio, "Bourbonnais," Messenger, Ill., 1st premium,..... $100 00

No. 3. Geo. S. Hodges, Charleston, Mich., "Norman Tiger," N. Y., weight 1450, 2d prem.,.... $50 00

The committee, after a careful examination, award the premiums as set forth above, and desire to state in this connection, that all the entries in this class are very superior animals, and each worthy of special notice.

Committee—N. H. Osborne, S. G. Pattison, C. E. Morrison.

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CLASS IX.

No. 71. A. C. Fisk, Coldwater, "Fashion," thoroughbred, N. Y., 10 years old, 1st prem..... $70 00

No. 1. Thos. Knight, Ceresco, "Bloom," Pr. Albert, Mich., 6 years old, 2d prem..... 35 00

Committee—Edward Parsons, W. C. Ward, John Davis.

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CLASS X.

No 93. H. M. Wright, Coldwater, "Highflyer," Trustee, N. Y., 1st premium,..... $50 00

No. 123. O. B. Flagg, Kalamazoo, "Kitty," thoroughbred, 2d premium,..... 25 00

Committee—Edward Parsons, John Davis, N. C. Ward.

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CLASS XI.

No. 121. W. Haywood, Charleston, "Jenny," Morgan, 1st prem,..... $10 00

No. 35. H. N. Moore, Coldwater, "Jenny Moore," Blk. Hawk, 2d premium,..... 20 00

Committee—Chas. Dickey, N. Burrell, S. Warren.

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CLASS XII.

No. 97. J. S. Kellum, Detroit, "Magnolia," thoroughbred, 1st prem.,..... $30 00

No. 39. F. V. Smith, Coldwater, "Mrs. McBride," Blk. Hawk, 2d premium,..... $15 00

Committee—A. Rogers, J. Atherton, Z. Waterman.

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CLASS XIII.

No. 112. E. H. Davis, Kalamazoo, "Young Lady," Blk. Hawk, 1st prem.,..... $20 00

No. 89. R. Lewis, Schoolcraft, "Sir Henry," 2d premium, ... 10 00

The committee to whom was assigned the duty of examining the colts entered in this class, find great difficulty in determining which should carry off the prize, as they are all superior animals, and each entitled to consideration, but as the committee are limited to two awards, they recommend premiums as above.

Committee—J. Milham, S. Warren, J. Atherton.

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CLASS XIV.

No 95. J. H. Caniff, Detroit, "Forest Rose," 1st premium, ... $16 00

No. 85. O. C. Hill, Texas, "Rose Beauty," Blk. Hawk, 2d prem..... ..... 8 00

Committee—C. S. Mack, Z. Waterman, A. Rogers.

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CLASS XV.

No. 41. F. V. Smith, Coldwater, "Elder Sniffles," Blk. Hawk, 1st prem..... $40 00

No. 34. H. N. Moore, Coldwater, "Watchmaker," 2d prem.,..... 20 00

Committee—Z. Waterman, E. Adams, C. E. Morrison.

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CLASS XVI.

No. 45. Philip Goodrich, Comstock, "Morg," Morgan and Messenger, 1st premium,..... $30 00

No. 76. P. C. Lowe, Florence, "Shanghai," Florazelle, 2d premium,..... 15 00

Committee—Anson Rogers, Ezra Lusk, J. Atherton.

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CLASS XVII.

No. 53. J. B. Crippen, Coldwater, "Lounger," Black Hawk, 1st premium,..... $30 00

No 134. John Gale, Wisconsin, "Flora Temple," Black Hawk, 2d premium,..... 15 00

The committee desire to mention a fine colt entered in this class. Entry No. 54, J. B. Crippen, Coldwater, "Loafer," as worthy of special notice.

Committee—A. Rogers, I. T. Smith, J. H. Farnsworth.

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CLASS XVIII.

There were no entries in this class.

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CLASS XIX.

No. 139. C. Fulkerson, Marengo, "Marvel," 1st premium, ... $20 00

No. 160. E. Butterworth, Coldwater, "Timer," Black Hawk, 2d premium,..... 10 00

Committee—F. O. Chamberlain, L. G. Bickford, J. Atherton.

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CLASS XX.

No. 80. Jas. Connelly, Ceresco, "Hornet," 1st premium, ... $16 00

No. 7. F. E. Walbridge, Kalamazoo, "Nicholas," Black Hawk, 2d premium,..... 8 00

No. 82. A. C. Fisk, Coldwater, "Prince," is worthy of special notice.

Committee—F. O. Chamberlain, L. G. Bickford, H. C. Kibbee.

CLASS XXI.

No. 72. A. C. Fisk, Coldwater, "Lady Moscow," thoroughbred, 3 months old, 1st premium,.... $16 00
No. 15. F. E. Eldred, Detroit, "Bonny Brooks," thoroughbred, 2d premium,..... 8 00

The committee desire to notice No. 2, Thomas Knight, Ceresco, "Lady Plover, as a colt highly meritorious.

Committee—A. O. Hyde, B. H. Thompson, H. Lewis.

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CLASS XXII.

No. 56. Crofoot and Burrill, Pontiac, "Pontiac Chief," and "Wild Indian," Messenger, 6 and 9 years, 1st premium,..... $100 00
No. 10. Daniel Knapp, Jackson, 2d premium,... 50 00

Your committee would recommend a discretionary premium of $50 to William Clark, Wisconsin, for a pair of horses, not matched, but superior roadsters.

Committee—J. T. Smith, H. Lewis, D. Smith.

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CLASS XXIII.

No. 164. C. Van Ness, Coldwater, "Doc and Diamond," 5 and 7 years, 1st premium,..... $100 00
No. 87. H. Mills, Richland, "Frank and Ben," Goldfinder, 6 years, 2d premium,..... 50 00

Committee—A. O. Hyde, D. B. Smith, J. J. Wise.

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CLASS XXIV.

No. 141. A. J. Dean, Chicago, "Jenny and Flora," Black Hawk, Vt.. 6 and 7 years, 1st premium.. $100 00
No. 48. Morris Knapp, Jackson, 2d premium,... 50 00

A pair of horses, entry No. 115, Cady and Yale, Grand Rapids, are worthy of special commendation.

Committee—F. O. Chamberlain, C. E. Morrison, L. G. Bickford.

CLASS XXV.

There were no entries in this class.

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CLASS XXVI.

No. 140. A. J. Dean, Chicago, "Jewel," Blucher, Mich., 1st premium..... $ 50 00

No. 118. W. A. House, Kalamazoo, "Dick," Blucher, Ohio, 2d premium,..... 25 00

Committee—L. G. Bickford, Z. Waterman, John Davis.

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CLASS XXVII.

No. 24. F. V. Smith, Coldwater, "Grey Ætna," 7 years, 1st premium,..... $ 50 00

No. 24. J. C. Bassett, Kalamazoo, "Jenny Lind," 7 years, 2d premium,..... 25 00

Your committee report, that they award the premiums to the above named horses, on account of superior style, size, action, and speed. They also desire to mention No. 33, A. Ferguson, Kalamazoo, "Dick," as worthy of particular notice.

Committee—A. Rogers, C. E. Morrison, S. Warren.

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CLASS XXVIII.

No. 865. F. O. Rogers, Niles, "Prince," Black Hawk, 1st premium,..... $ 20 00

No. 143. J. T. Rayault, Jackson, "Chelsea," 2d premium, ... $ 10 00

Committee—E. Adams, A. J. Bass, B. H. Thompson.

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XXIX.

No. 62. H. H. Yates, Chicago, "Black Swan," Copperbottom, Ky., 1st premium,..... $ 20 00

No. 144. Horace Mower, Kalamazoo, "Billy," Black Hawk, 2d premium,..... $10 00

***Committee*—E. Adams, A. J. Bass, B. H. Thompson.**

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CLASS XXX.

No. 116. W. R. Cady, Gr'd Rapids, 1st premium, $ 10 00
No. 147. Mr. Pratt, Marshall, 2d premium,..... 5 00

The committee desire to notice No. 108, Frank Dudgeon, Kalamazoo, "Jimmy," as a good moving animal, and worthy of consideration. Also, No. 150, Anthony Taylor, Kalamazoo, as almost or quite equal to No. 108.

Committee—D. Smith, J. Atherton, S. G. Pattison.

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CLASS XXXI.

No. 94. O. Davenport, Portage, "Jack and Prince," Indiana, 1st premium,..... $ 40 00
No. 59. Hoskins & Noble, Wayland, 2d premium, 20 00

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CLASS XXXII.

No. 11. Edward Hodges, Comstock, "Tiger," Messenger, weight 1350, 1st premium,..... $ 20 00

There was but one entry in this class.

Committee—S. G. Pattison, C. E. Morrison, A. Rogers.

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CLASS XXXIII.

No. 124. Thomas Williams, Kalamazoo, "Stone Plover, thoroughbred, England, 9 years, prem., $100 00

In this class there were but two entries, "Stone Plover" and "Vermont Hero," and the judges having stated that they should have divided the premium, if they had supposed they possessed the authority to do so under the rules of the Association, upon the ground that said horses

are equally meritorious. Therefore, the Association awards a discretionary premium:

No. 110. S. F. Goss, Centreville, "Vermont Hero" Black Hawk, Vermont, 9 years, discretionary premium,..... $100 00

Committee—N. H. Osborne, S. Warren, E. Parsons.

GEO. F. KIDDER,
Secretary.

W. G. PATTISON,
Treasurer.

Kalamazoo, Mich., Nov. 1, 1859.

KENT COUNTY.

To the Secretary of the Michigan State Agricultural Society:

The President, Secretary and Treasurer, of the Kent County Agricultural Society, beg leave to make the following report of its proceedings for the year 1859:

The eleventh annual fair of the Kent County Agricultural Society, was held upon their new fair ground, on the 28th, 29th and 30th days of September. The present year marks a new era in the history of the Society, having held their exhibition for the first time upon grounds purchased some years since, but heretofore unimproved. The Society now rejoice in a permanent location on a beautiful tract of land on the southern border of the city of Grand Rapids, consisting of thirty-four acres, which during the past year has been grubbed and enclosed with a substantial board fence. A trotting track, three-fourths of a mile in length, has been fitted up, two wells dug, furnishing an abundant supply of water, and permanent buildings erected for the use of the Society. Nearly sixteen hundred dollars has been expended upon the grounds without increasing their indebtedness. Of that amount about twelve hundred dollars was raised by the sale of life

memberships, at $10 each, and nearly $150 was donated, mostly in labor.

The profits of the horse show more than made up the deficiency, as will be seen by a reference to the financial report herewith submitted. Although the receipts from annual fair, aside from life memberships, did not exceed those of last year, in all other respects there was a decided advance on any former exhibition of the Society. The number of entries were 759, being 120 more than last year. The display of animals and products of the farm, the dairy and the garden, was very creditable, showing a steady increase of interest and effort among the friends of the Society. The attendance upon the grounds was good on the first and second days of the fair; the last was stormy and uncomfortable, deterring many from visiting the grounds on that day. The results, upon the whole, of the past year's labor, are quite satisfactory, showing a decided progress.

We herewith enclose a statement of receipts and expenditures, the reports of the awarding committees at the horse show, the list of premiums awarded at the annual fair, and the annual address delivered on the fair ground, on the afternoon of the last day, by our fellow-citizen, Rev. S. S. N. Greeley.

JOEL A. SIMONDS,
President.
GEORGE C. FITCH,
Treasurer.
L. S. SCRANTON,
Secretary.

Grand Rapids, Dec. 20, 1859.

On entering the present fiscal year, we found the society owning thirty-four acres of land, unfenced, and in an entirely wild state, for which we were owing.. $2,213 49

Besides which we were owing unpaid premiums,	$ 50 00
Taxes on the land,	16 77
Total,	$2,280 26
To meet which we had an appropriation by the Board of Supervisors of	$232 00
And a slow note of	75 00

In this embarrassed condition, and under the actual necessity of fitting up the grounds, the executive board were at a stand what course to pursue. The following course was finally adopted: An effiicient agent was employed to canvass the county and sell life memberships for the sum of ten dollars each.

From this source we have raised	$1,299 00
Besides donations of	20 00
Total,	$1,319 00

With which we set about fitting the grounds at an expense in grubbing and clearing of $240 00

Fencing,	542 50
Labor donated in fitting a track, about	100 00
Donated in cash,	53 60
Two wells and pumps,	36 00
For buildings,	576 20
Making in all expended on the ground,	$1,548 30

On the 25th and 26th days of August, we had a horse show upon the grounds, the total receipts from which were $737 10

Out of which was paid for premiums and exp's	433 00
Leaving a profit of	$304 10

On the day of September, we held our annual Fair, the total receipts from which were $457 17

Premiums and expenses about	406 00
Profit about	$51 17

We have paid other indebtedness as follows :

Interest on land debt,	$130 00
On principal,	108 00
Taxes on land,	16 77
Premiums of 1858,	50 00
Paid agent,	140 00
Total,	$444 77
Leaving the society in debt beside land debt,	$219 00

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List of Premiums awarded at the Horse Show, held on the 26th and 27th days of August.

CLASS I.

Trotters.

In this class your committee find entered as trotting stallions, five years old and over, Moscow or Defiance, and Othello or Black Prince; these were tested, best two in three, round the track. The first premium of $25, was awarded to Moscow, owned by A. C. Fisk, of Coldwater; time 2:4 and 2:7, two heats, he winning the two first.

The second premium of $10, given to Black Prince, owned by A. C. Fisk, of Coldwater.

The only four year old trotting stallion entered was Magna Charta, owned by E. Wright, of Utica, Macomb county. He, therefore, went alone, making one turn of the track in 2:01, being at the rate of a mile in 2:41½, which, considering the condition of the track, was superb going. Premium $15.

As trotting mares, five years old and over, there were two entries, Abby Kelly, owned by William Johnson, of Marshall, and Lucy Neal, owned by W. S. H. Welton, of Grand Rapids town. First premium of $10 awarded to Abby Kelly; second premium of $5, awarded to Lucy Neal.

There were no trotting mares of four years old entered.

Trotting mares, three years old and under, two entries.

Fanny, two years old, owned by A. C. Fisk, of Coldwater, and Flora, Jr., owned by N. H. Ashley, of Grand Rapids town.

First premium of $8, was given to Fanny, she showing superior training and making equal time, although a year younger.

Second premium of $3, to Flora, Jr.; although lacking training, she showed splendid style and action.

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CLASS II.

Stallions for all work.

C. C. Norton, city, Telegraph, first best,..... $10 00
Isaac Edison, Walker, Bay Roman, second best,.. 5 00

Stallions four years old.

E. V. Smith, Coldwater, Rob Roy, best, ... $8 00
Isaac Edison, Walker, Morgan Rattler, 2d best,.... 5 00

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CLASS III.

Brood Mares.

H. Sears, Cascade, best, ... $8 00
J. W. B. Smith, Grattan, 2d best,..... 4 00

In this class the committee make favorable mention of two mares entered by Messrs. Edison and Friant.

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CLASS IV.

Colts three years old.

H. Green, Grattan, Kent Farmer, best,..... $5 00
I. Edison, Walker, 2d best,..... ..... 3 00

Colts two years old.

J. M. Brown, Otisco, best,..... $4 00
A. Thompson, Courtland, 2d best,..... 2 00

Yearlings.

E. Guild, Paris, best,..... $4 00
I. V. Schermerhorn, Walker, 2d best,..... 2 00

Sucking Colts.

Asa Meech, Paris, best,..... $4 00
H. Sears, Cascade, 2d best,..... 2 00

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CLASS V.

Group of Colts.

For the best group of sucking colts, the premium was awarded to five, sired by Telegraph, owned by C. C. Norton, $10.

Best five colts, without reference to age, sired by same horse, Old Bay Roman, owned by J. W. Webster, of Cascade, $10.

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CLASS VI.

Matched Carriage Horses.

E. Crofoot, Pontiac, ... $10 00
W. R. Cady, city,..... 5 00

Favorable mention is made of a pair of black horses entered by A. C. Litchfield.

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CLASS VII.

Draft Horses.

In this class there were but two entries, one made by J. S. Kellogg, of Kelloggville, the other by N. H. Cady, of this city. These were two as noble a pair of draft horses as can be found in the State. They were tested by drawing a load 8,407 pounds, placed on bob-sleds, drawn on the bare sand—which load was drawn by both teams. As no harness could be found strong enough to

test further, the Judges declared it a *draw* game, and put first and second premiums together, ($15) and divided it.

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CLASS VIII.

Single Horses—Family Horses.

Geo. Kendall, city, best,..... $8 00
Wm. Hovey, city, 2d best,..... 4 00

Gents' Single Horses.

R. Wells, city, best,..... $8 00
J. P. Fiske, Grand Rapids town, 2d best,..... 4 00

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CLASS IX.

Saddle Horses.

The first premium for ladies' saddle horses, was awarded to A. N. Norton's Lady Nell, rode by Miss Susan Rathbun, $8 00.

Second, to C. C. Norton's horse, rode by Miss Norton, $4 00.

The committee make honorable mention of the riding of Miss Snowden, who rode an untrained animal.

Gents' Saddle Horses.

A. N. Norton's Tom Morgan, best,..... $6 00
Wm. Chamberlain, 2d best..... 3 00

On the day following the horse show, the citizens contributed means and offered premiums for trotting speed, (the Society having offered none for speed exclusively) giving to the Society the gate fees, to be expended for further improvements on the grounds.

The premiums offered were for the best trotting stallion, $25, which was awarded to Magna Charta, owned by C. Wright, of Utica.

The second best, the entry fees of the horses in that

class, $10, which was awarded to Othello, owned by A. C. Fisk, Coldwater.

The best trotting mare or gelding, $50, which was awarded to Gray Ætna, owned by F. Smith, of Coldwater.

The second best, the entry fees, $15, which was awarded to Pontiac Chief, owned by M. Crofoot, Pontiac.

The best trotting green horse, $12, which was awarded to Pontiac, Jr.

The second best, the entry fees, $8, which was awarded to Rob Roy, owned by F. Smith, Coldwater.

COUNTY FAIR.

Award of Premiums at the Annual Fair, held September 28th, 29th and 30th, 1859.

CLASS I.

Durhams.

Best bull, 3 years old and over, Z. G. Winsor, Paris,	$5 00
2d do, John Richards, Paris,	2 00
Best cow, 3 years old, Z. G. Winsor, Paris,	5 00
do yearling bull, Z. G. Winsor, Paris,	4 00
do bull calf, Z. G. Winsor, Paris,	2 00

A. ROGERS,
D. M. WATSON,
JOHN PORTER,
Committee.

CLASS II.

Devons.

The number of entries in class second was quite small, only ten in all, leaving the Judges but little to do by way of comparison. They found they had still less to do, when, upon examining the rules of the Society, they noticed that none but pure bloods would be allowed to compete, and

competitors must present full and accurate pedigrees of each animal, which rule was only complied with in a single instance. We could not, therefore, award premiums to animals not accompanied with full pedigrees, without going beyod the duties assigned us. Had a full pedigree been presented of a cow over three years old, (No. 79) we should have awarded to that animal the first premium. There was one entry made of a cow over three years old, (No. 537) which the Judges are satisfied is not a full blood, and belonged to the class of cross bloods. We have, therefore, made the following award to a cow over three years old, she being the only cow accompanied with a full pedigree:

Best cow over 3 years old, O. J. Bissell, city,..... $5 00

The Judges think the most of the other cattle entered in this class, were full blooded, and think they should not be deprived of all premiums, because their owners had a mistaken idea about what would be required of them by the Society; but the Judges think that justice cannot be done to those having full blooded animals, unless all are required alike to give full pedigrees, and would recommend that hereafter the Society adhere strictly to all rules which they make respecting full blooded animals, believing this to be the only way to protect the interests of the Society, and also the interests of competitors. We would, however, recommend that the following premiums be awarded:

Best bull, 3 years old and ov., J. R. Edison, Walker, $4 00
do. cow over 3 y'rs old, Sam'l Condon, Vergennes, 4 00
2d best do., Samuel Condon, Vergennes,..... 1 50
Best bull, 2 years old, Wm. Ball, city,..... 3 00
2d best do., O. J. Bissell, city,..... 1 00
Best heifer under 3 years, Alanson Powers, Grand Rapids, ... 2 00

2d best do., Alanson Powers, Grand Rapids, ... $1 00
Best calf, Samuel Condon, Vergennes,..... 1 00

S. S. BAILEY,
J. R. HOLDEN,
PARLEY E. HOUSE,
Committee.

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CLASS III.

Grades and Crosses of Bloods.

Best bull, 3 years old and over, J. Field. Alpine, $5 00
2d best do., Wm. Birdsall, Alpine,..... ..... 2 00
Best bull, 2 years old, D. M. Miller, Grattan,..... 4 00
2d best do., Samuel Condon, Vergennes,..... 2 00
Best cow, Milo White, Walker,..... 5 00
2d best do., Henry Seymour, Paris,..... 2 00
Best yearling bull, Harmon Jewell, Wyoming,... . 4 00
do. heifer, D. M. Watson, Paris,..... 3 00
2d best do., D. A. Wicks, Grand Rapids,..... 1 50
Best bull calf, Marshall Howe, Paris,..... 2 00
do. heifer calf, Myron Richards, Paris,..... 2 00

Your committee would say that there were several grade cows, worthy of premiums, besides those to which premiums were awarded; and that it was difficult to determine between the grade bulls, which were most worthy of premiums. The committee would recommend that third premiums be awarded at our next Annual Fair, on oxen, bulls and cows.

MILO WHITE,
D. M. SKIDMORE,
H. H. ALLEN,
Committee.

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CLASS IV.

Natives.

Best yoke of oxen, L. K. Jenne, Grand Rapids,.... $5 00
2d best do., A. N. Norton, city,..... 2 00

Best bull, over 2 years old, George Edison, Walker, $4 00
do. yearling bull, " " 1 00
do. cow, over 3 years old, S. M. Garfield, Paris,.... 4 00
2d best do., Joseph Waite, Walker,..... 2 00
Best heifer, 2 years old, I. D. Hazen, city,..... 2 00
2d best do., David Seymour, city,..... 1 00
Best yearling heifer, C. Hall, Grand Rapids,..... 1 00
do. heifer calf, S. M. Garfield, Paris,..... 1 00
do. yoke 3 year old steers, M. Hunting, Courtland, 4 00
do. yoke 2 " W. B. Fleming, Paris,.. 2 00
The lad presenting the best managed pair of steers,
J. M. Fleming, Paris,..... 2 00

Your committee very much regret that there were so few native cattle on exhibition, there being not a sufficient number to compete for all the premiums on the list, except working cattle, of which there was a fair competition, and your committee found it very difficult to determine which were the most worthy of premiums.

MILO WHITE,
H. H. ALLEN,
D. M. SKIDMORE,
Committee.

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CLASS V.

Fat Cattle.

Best fat cow, F. B. Gilbert, city,..... $3 00
2d best do., John Zinzer, city,..... 2 00

John Zinzer exhibited a fine Devon cow, very fat, but lacking size; the committee are under obligation to give her the second premium.

L. K. JENNE,
JOHN ZINZER,
Committee.

CLASS VI.

Horses.

Best brood mare, J. W. B. Smith, Grattan, ...	$5 00
2d best do., Thomas Healy, Walker,.....	2 50
Best sucking colt, J. W. B. Smith, Grattan,.....	1 50
2d best do., Mr. Richmond, city—prémium not allowed, because not entered by owner.	
Best 1 year old colt, Wm. Hartwell, Cannon,.....	2 00
2d best, do., " "	1 00
Best 2 year old colt, S. Cross, Grand Rapids,.....	3 00
2d best do., L. H. Johnson, Alpine,.....	1 50
Best 3 year old colt, O. J. Odell, Vergennes,.....	4 00
2d best, do., F. W. Worden, Plainfield,.....	2 00
Best 4 year old stallion, or under, E. Graham, Courtland, ...	5 00
2d best do., O. J. Odell, Vergennes,.....	2 50
Best stallion, 5 years old and ov., C. C. Norton, city,	6 00
2d best do., I. Edison, Walker, ...	3 00
Best team for all work—being the only one complying with all the conditions, J. T. Malcomb, Walker,	4 00
2d best do., N. H. Cady, city,.....	2 00
3d best do., E. D. Hogadone, Walker, ...	1 00
Best pair matched carriage horses, W. R. Cady, city,	4 00
2d best do., A. N. Norton, city,.....	2 00
Best family horse, H. J. Hollister, city,.....	2 00
2d best do., Wm. Hovey, city,.....	1 00
Best gent's driving horse, LeGrand Peirce,.....	2 00
2d best do., C. Rathbun, Paris,.....	1 00
Best gent's riding horse, Canton Smith, city,.....	2 00
Best lady rider, Mary Ann Snowden, Alpine.	
2d best do., Miss Josey Norton, city.	

(Committee would call attention of the public to the spotted dog which accompanied the Sheriff on exhibition

—we think the spots ingeniously and generously put on—the *dog*, not the Sheriff.)

L. COVELL,
C. SMITH,
MAJ. WORDEN,
Committee.

CLASS VII.

Sheep.

Best fine wool buck, John Richards, Paris,	$4 00
2d best do., Aaron Brewer, Gaines,	2 00
Best long wool buck, L. H. Johnson, Alpine,	4 00
2d best do., S. S. Bailey, Paris,	2 00
Best 5 fine wool ewes, Hiram Knapp, Paris,	4 00
2d best do., Myron Richards, Paris,	2 00
Best 5 long wool ewes, W. Birdsall, Walker,	4 00
2d best do., S. S. Bailey, Paris,	2 00
Best 5 fine wool lambs, Hiram Knapp, Paris,	2 00
do. 5 long wool lambs, W. S. H. Welton, Grand Rapids,	2 00
2d best do., W. Birdsall, Walker,	1 00
Best long wool buck lamb, W. S. H. Welton, Grand Rapids,	1 00
2d best do., W. Birdsall, Walker,	50
Best fine wool buck lamb, Hiram Knapp, Paris,	1 00

We would also recommend a premium of two dollars to O. Van Buren, of Grand Rapids City, for two noble South Down bucks, the only ones on exhibition. We consider South Down sheep superior to all others for mutton. The show of fine wool sheep was very small. Several of the best flocks in the county were not represented. We hope this will not be the case another year; let the wool grow

ers of Kent county do their best and they cannot easily be surpassed by any other county in the State.

HENRY SEYMOUR,
WILLIAM SLAYTON,
J. W. B. SMITH,
Committee.

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CLASS VIII.

Swine.

Best boar, 8 month old or over, F. Kelley, Gaines, $4 00
2d best do., W. S. H. Welton, Grand Rapids.
Best sow, Alanson Powers, Grand Rapids, ... 4 00
do. sow and 8 pigs, W. S. H. Welton, Grand Rapids, 5 00

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CLASS IX.

Poultry.

Best coop turkeys, John W. Fisk, Grand Rapids,.. $1 00
2d best do., H. Seymour, Paris,..... 50
Best coop hens, F. G. Martindale, city,..... 1 00
2d best do., B. F. Martindale, Walker,..... 50

Your committee would say that the show of poultry was very small, but we feel much pleased to see them fall back on the common native fowl.

WILLIAM I. BLAKELY,
LUCIUS ALGER,
Committee.

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CLASS X.

Tools and Farm Implements.

Best 2 horse wagon, Fitch & Brown, city,..... $4 00
2d best do., Wm. Edmondson,..... 2 00
Best 1 horse wagon, Fitch & Brown, city,..... 3 00
2 best do., Wm. Edmondson, city,..... 1 50

Best whiffletrees, evener and neckyoke, Fitch & Brown, city,..... $ 50
Best 2 horse cultivator, E. U. Knapp, G. Rapids,.. 1 50
do. 1 horse cultivator, A. L. Chubb, city,..... 1 50
do. sub-soil or double plow, G. S. Dean, city,..... 1 00
do. breaking plow, A. L. Chubb, city,..... 1 50
do. sod-plow, A. L. Chubb, city,..... 1 00
do. stubble-plow, " " 1 00
do. harrow, " " 1 00
do. hay-rigging, Solomon Wright, Alpine,..... 1 00
do. roller, A. L. Chubb, city, ... 1 50
do. Stump-puller, E. F. Ward, & Co., city,..... 4 00
do. garden wheelbarrow, Fitch & Brown, city,... 50
do. bee-hive, I. E. Warren, city,..... 50

There was a large and good selection of lumber wagons, and the committee had much difficulty in determining the best. There was a large and splendid lot of plows, manufactured in our own county, by H. G. Stone, G. S. Dean and A. L. Chubb; and the committee are happy in saying they discover great improvements in the manufactory of these important implements.

O. H. FOOTE,
C. KELLEY,
A. BREWER,
Committee.

CLASS XI.

Mechanics.

Best two horse carriage, with top, Fitch & Brown, city,..... $5 00
Best two horse carriage, open, A. T. Anderson, Walker,..... 4 00
Best one horse carriage, with top, Fitch & Brown, city,..... 3 00

Best one horse carriage, open, Fitch & Brown, city, $2 00
do. cutter, Seymour & Baldwin, city,..... 2 00
do. set finished spokes, Fitch & Brown, city,..... 50
do. brick, C. Barclay, city,..... 50
do. panel door, E. F. Ward & Co., city,..... 1 00
do. horse shoe and nails, G. G. Bailey, Paris,..... 50
do. window blinds, Daniel Kelley, city,..... 1 50
do. cooper's tools, D. Alcumbrack, city,..... 1 00
do. set edge tools, " " " 2 00
do. adze, " " " .....
do. broad axe, " " " .....
do. narrow axe, " " " 50
do. grub hoe, " " " 50
do. six joints stove pipe with elbow, Foster & Metcalf, city,..... 50
Best cook stove, Foster & Metcalf, city,..... 2 00
do. set copper furniture, Foster & Metcalf, city,... 1 00
do. parlor stove, Foster & Metcalf, city,..... 1 00
do. specimen dentistry, L. A. Rogers, city, ... 1 00
do. assortment tin work, Josiah Creque, city,..... 50
do. blank books, Hinsdill Brothers, city,.....
do. parlor show case, H. A. Wilson, city,..... 1 00
do. barrel calcined plaster, Hovey & Co., city,.... 75
do. plaster ornaments, Wm. Laraway, city,..... 50
do. weather strip, Daniel Kelley, city,.....

ISAAC TURNER,
J. J. WATSON,
ED. P. PEIRCE,
Committee.

CLASS XII.

Leather.

Best double harness for all work, Kruger & Booth, city,..... $2 00
Best carriage harness, Kruger & Booth, city,..... 2 00

Best single harness,	Kruger &	Booth,	city,.....	$1	00
do. saddle and bridle,	"	"	"		75
do. side saddle,	"	"	"		75
do. horse blanket,	"	"	"		25
do. horse net,	"	"	"		25

There was a trunk and two hat boxes, very nice articles, for which we would recommend a small premium, say $1. We also deem it due to Messrs. Kruger & Booth, to mention various other articles which they exhibited, and for which no premiums are offered, such as a variety of very nice whips and a sweat collar, which are worthy the attention of those in want.

M. RINGUETTE,
D. SEYMOUR,
Committee.

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CLASS XIII.

Butter, Cheese, Sugar, Honey, Bread and Flour.

Best June butter,	Jedediah Field, Alpine,.....	$2	00
2d best do	G. W. Dickinson, Grand Rapids,	1	00
Best fall butter,	Arabella Denison, Cascade,.....	2	00
2d best do.,	Andrew Loomis, Loomisville,.....	1	00
Best Cheese,	Mrs. Solomon Wright, Walker,.....	1	00
2d best do.,	Mrs. John Richards, Paris,.....		75
Best grained maple sugar,	F. F. Bailey, Paris,.....	1	00
2d best do do	G. G. Bailey, Paris,.....		75
Best bakers' bread,	J. Carson, city,.....		50
do. crackers,	J. Carson, city,.....		50
do. domestic bread,	Mrs. M. L. Sweet, city,.....		50
do. brown bread,	Mrs. Henry Seymour, Paris,.....		50
do. honey in comb,	I. E. Warren, city,.....		75
do. corn meal,	A. Dunham, city,.....		50
do. sack of hominy,	A. Dunham, city,.....		50

Two samples of maple molasses were exhibited, well worthy of a premium.

CICERO PORTER,
GEO. KENDALL,
MRS. E. S. EGGLESTON,
Committee.

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CLASS XIV.

Domestic Arts.

Best woolen shawls, Mrs. A. H. Rood, city,.....	$0	50
do. flannel sheets, Mrs. D. Schermerhorn, Walker,		75
do. woolen yarn, " " " "		50
do. stocking yarn, Mrs. John Edison, Walker,.....		50
do. woolen socks, Mrs. Pliny Smith, city,.....		25
do. woolen gloves, Mrs. John Edison, Walker,.....		25
do. flannel, eight yards, G. M. Huntley, city,.....		75
do. full cloth, " " "	1	00
do. rag carpet, Mrs. J. D. Alger, Paris,.....	1	00
do. white quilt, knit, Mrs. H. C. Brooks, city,.....		50
do. hearth rug, Mrs. E. M. Weber, city,.....		50
do. ladies' woolen hose, Mrs. J. Edison, Walker,...		25
do. woolen mittens, Mrs. Hiram Knapp, Paris,.....		25
do. specimen knitting, Mrs. Hannah Hinsdill, Paris,		50
do. specimen clothing, Ray V. Smith,.....	1	00

A fine specimen of tailor work by a female, exhibited by Mrs. Florilla L. Colton, was worthy of special notice, but not entered for premium.

The entire display of articles in this class is very creditable.

MRS. GEO. KENDALL,
MRS. HENRY MARTIN,
E. SMITH, Jr.,
Committee.

CLASS XV.

Fancy and Ornamental.

Largest variety of embroidery, Mrs. S. C. Smith, city,..... $2 00
Ornamental work, worsted embroidery, Mrs. Mary P. Warren, city,..... 1 00
Chair tidy, Mrs. A. E. Lockwood, city,..... 25
Ottoman cover, Mrs. W. R. Cady, city,..... 25
Worked collar, Mrs. S. C. Smith, city,..... 25
Fancy quilt, Mrs. E. M. Weber, city,..... 50
2d best do., Mrs. Pliny Smith, city,..... 25
Lace cap, John Kendall, city,..... 25
Pair lamp mats, Mrs. W. R. Cady, city,..... 25
Silk bonnet, John Kendall, city,..... 50
Straw bonnet, " " 50
Misses' hat, " " 25
Collection of artificial flowers, John Kendall, city, 50
Greatest variety shells, A. W. Slayton, Grattan,.... 50
do. do. minerals, Hovey & Co., city,..... 50
do. do. ancient coins, John F. Tinkham, city,..... 50
Greatest display in natural history, J. H. Morgan, city,..... 50
Second best embroidery, Mrs. H. A. Rood, city,... 75
Fancy hair work, M. E. Bettis, Alpine,..... 75
Fancy baskets, Mrs. G. C. Nelson, city,..... 50
Child's knit worsted jacket, Mrs. Sarah E. Heath, city,..... 50
Two specimens worsted work, Sontag and cloud, Mrs. R. P. Sinclair, city,..... 50

J. KENDALL,
MRS. L. COVELL,
MRS. GEO. GRAY,
Committee.

CLASS XVI.

Paintings, Drawings and Daguerreian Work.

Specimen portrait painting, M. Harting, city,..... $2 00
Group in oil, M. Harting, city,..... 1 00
Single specimen of daguerreian work, F. Heath, city,..... 1 00
Specimen sketching, Mrs. J. R. Holden, Wyoming, 50
Largest collection of daguerreian work, E. S. Wykes, city,..... 2 00
Plan and elevation of farm house, J. J. Watson,... 1 00

The committee have regretted that the specimens of daguerreian work on exhibition by our resident artists were not more full, as they are persuaded that there is a skill among them which would command a favorable notice in a fair and full competition. The collection by Mr. Wykes is very full, and presents specimens of rare excellence. With reference to the plan of a farm-house, the committee take occasion to say that their award has been influenced by the fact that a ground plan is seen in connection with the number preferred. Some specimens of graining and marbling exhibited by Mr. Hodgson, of this city, were so well executed that it would be difficult for any but Dame Nature to beat them, but no premiums were offered.

C. SMITH,
MRS. WM. HOVEY,
Committee.

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CLASS XVII.

Flowers.

Greatest variety of cultivated flowers, Mrs. Geo. C. Nelson, city,..... 1 00
Best basket bouquet, with handle, Mrs. Geo. C. Nelson, city,..... 1 00

Greatest variety of dahlias, Mrs. G. C. Nelson, city, $0 50
do. do. petunias, " " " " 50
do. do. phloxes, " " " " 50
do. do. indigeneous flowers, Mrs. M. P. A. Crozier, Paris,..... 1 00
Best floral ornament, Mrs. Crozier,..... 1 00

The exhibition in this class was quite limited. The only specimens of cultivated flowers were entered by Mrs. Geo. C. Nelson, who deserves special commendation for the interest and taste manifested in the arrangement of the flowers contributed by her. The only specimen of indigeneous flowers was No. 46, and the only floral ornament was No. 47, both deserving of notice, the floral ornament especially, which was composed of mosses, grasses, seeds, buds and flowers, very tastefully arranged. These were entered by Mrs. M. P. A. Crozier. To a jar of ten varieties of asters, contributed by Mrs. G. C. Nelson, we would recommend a premium of fifty cents. We would also recommend a premium of fifty cents for a Family Keepsake, Oriental Painting, entered by Benjamin Pierce, city, which is a fine specimen of that style of art.

A very handsome hand boquet, from Mrs. Cutler's garden, presented by Mrs. Julius Granger, but too late for a premium, is deserving of special notice, and we regret that it was not entered in time to compete for premiums.

A. HOSFORD SMITH,
JOHN F. TINKHAM,
MRS. J. W. SLIGH,
Committee.

CLASS XVIII.

Seeds and Vegetables.

Best winter wheat, A. W. Slayton, Grattan,..... $1 00
do. spring wheat, Daniel Schermerhorn, Walker,... 1 50

Best winter barley, S. S. Buck, Paris,..... 50
do. oats, W. S. H. Welton, Grand Rapids,..... 50
do. buckwheat, B. F. Martindale, Walker, ... 50
do. beans, J. R. Holden, Wyoming,..... 50
do. Timothy seed, A. T. Anderson, Walker,..... 1 00
do. yellow seed corn, Andrew Loomis, Loomisville, 50
do. white flint corn, Daniel Schermerhorn, Walker, 50
do. dent corn, E. U. Knapp, Grand Rapids,..... 50
do. King Philip corn, C. Hall, Grand Rapids,..... 50
do. sweet corn, Andrew Loomis, Loomisville,..... 50
do. blood beets, Joseph Meredith, Paris,..... 50
do. spring rye, E. U. Knapp, Grand Rapids,..... 50
do. early turnip beet, S. V. Stedman, Walker,..... 50
do. mangel wurtzels, Joseph Meredith, Paris,..... 50
do. carrots, A. Loomis, Loomisville,..... 50
do. parsnips, S. S. Bailey, Paris, ... 50
do. vegetable oysters, S. S. Bailey, Paris,..... 50
do. sugar beets, I. D. Hazen, city,..... 50
do. ruta bagas, O. Van Buren, Walker,..... 50
do. turnips, Joseph Meredith, Paris, ... 50
do. cabbage, John F. Godfroy, city,..... 50
do. cauliflower, Henry Seymour, Paris,..... 50
do. Lima beans, O. Van Buren, city,..... 50
do. onions, Henry Allen, Paris,..... 50
do. onion sets, S. S. Bailey, Paris,..... 50
do. sweet potatoes, S. S. Bailey, Paris,..... 50
do. half bushel potatoes, English Fluke, Henry Allen, Paris,..... 50
do. pie plant, Henry Allen, Paris,..... 50
do. pumpkins, Hiram H. Allen, Paris,..... 50
do. winter squashes, S. C. Smith, city,..... 50
do. water melons, I. E. Warren, city,..... 50
do. nutmeg melons, Joseph Meredith, Paris,..... 50
do. broom corn, T. F. Richards, city,..... 50

Three varieties of tomatoes, by Joseph Meredith, we think worthy of notice, also, a few varieties of English

turnips. A new variety of English turnip, by Andrew Loomis, we recommend as worthy of consideration, also, a fine kind of red pepper.

JOHN BUTLER,
WM. WOOD,
D. SCHERMERHORN,
Committee.

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CLASS XIX.

Fruits.

Best variety autumn apples, Foster Kelley, Gaines,	$1 50
2d best do. do. do. Thales Dean, Walker,	1 00
Best eight varieties winter apples, F. B. Gilbert, city,	1 50
2d best, Thales Dean, Walker,	1 00
Greatest variety pears, Geo. C. Nelson, city,	1 00
2d best, F. B. Gilbert, city,	75
Greatest variety of peaches, Geo. C. Nelson, city,	1 00
2d best do., Daniel Schermerhorn, Walker,	75
Best dozen autumn apples, G. M. Barker, city,	50
do. dozen winter " J. W. Fisk, Grand Rapids,	50
do. doz. aut. pears, (white Doyenne) G. C. Nelson, city,	50
Best dozen winter pears (D'Arenberg) Geo. Nelson, city,	50
Best dozen quinces, Aaron Brewer, Gaines,	50
do. dozen peaches, yellow rareripe, G. C. Nelson, city,	50
Best 6 bunches Isabella grapes, N. Cumings, Alpine,	50
do. 6 bunches sweetwater grapes, Dr. A. Platt, city,	50

The committee would remark, that considering the unfavorable season, the display of fruit has been very fine; better than we expected. Most of the apples were not labelled, and many were entered under a general ticket, without specifying whether they were entered as winter, or autumn, or best dozen. Sometimes specifications were

made without particular numbers, and if any are disappointed we hope they will be careful in future. The exhibition of pears was finer than we have ever seen in this county. The eleven varieties entered by Mr. Nelson, would have done honor to any county. Those of F. B. Gilbert, were very fine. A remarkably large specimen of pear was entered by Mr. Avery, but as they were neither labelled nor ripe, the committe had no sure means of deciding upon their quality. It being too late in the season for the finest peaches, there were not many varieties on exhibition, but some were tested by the committee, which would leave an impression upon an epicure's memory, never to be effaced. Some very fine specimens of Concord, Isabella, and Sweetwater grapes were also exhibited.

A pear was shown by Judge Martin, not for premium, worthy of notice; sweet, melting, and delicious. We understood it to be a seedling; if so, it will probably be known, hereafter, as Martin's Seedling.

GEO. M. BARKER,
G. W. DICKINSON,
FOSTER KELLEY,
Committee.

CLASS XX.

Plowing Match.

Best plowing with double team, Daniel Schermerhorn, Walker, ... $5 00

Best plowing with single team, Wm. Dunnet, Walker, ... 3 00

The man who plowed with an ox team—No. 406, owned by L. K. Jenne—we recommend highly, as a good plowman, and an excellent hand to manage a team.

MYRON RICHARDS,
—— SPALDING,
ISAAC Z. WAITE,
Committee.

CLASS XXI.

Roadsters.

Best 3 year old, N. R. Ashley, Grand Rapids,..... $2 00
2d best do., C. Neal,..... 1 00
Best mare or gelding, 4 years old or over, C. Meech, Paris,..... 3 00
2d best do., J. W. Fisk, Grand Rapids,..... 1 50
Best roadster, stallion, C. Rathbun, Paris,..... 3 00
2d best do. C. Neal, Grand Rapids,..... 1 50

L. S. Scranton had a very fine horse in the class of roadster stallions. But not being present when the class was called by the Marshal, lost his chance for a premium.

L. COVELL,
C. SMITH,
MAJ. WORDEN,
Committee.

After the reading of the foregoing reports of Committees, the Grand Rapids Glee Club sung the following song in most admirable style:

Oh! give me a home in the country wide,
And a seat by the farmer's wood fire-side,
Where a fire burns bright,
On a frosty night,
Where the jest, and song, and laugh are free—
Oh! the farmer's home is the home for me.
Ah! yes, yes, yes, yes, yes, yes, yes, yes, yes,
The farmer's home is the home for me.

Oh! give me a home in the country wide,
When the earth comes out as a blushing bride,
With her buds and flowers,
In the bright spring hours,
Her bridal song from the fresh-leaved trees,
And the melody on the perfumed breeze,
Ah! yes, yes, &c.

Oh! give me a home in the country wide,
In the golden days of the farmer's pride,
When his barns are filled
From the fields he's tilled,
And he feels his task is done, is done,
And gladly greets old winter on,
Ah! yes, yes, &c.

Rev. S. S. N. Greeley then appeared upon the stand, and delivered one of the best agricultural addresses we have ever listened to. It was not only a finished production, considered as a literary paper, but presented facts of great importance to the interests of the farmer's profession. We need not dwell here upon its merits, as a vote was passed requesting the author to furnish a copy for publication.

At the conclusion of the address, the Glee Club sung the Star-Spangled Banner, in a style which it would be very difficult to excel.

The members of the Society met in the upper exhibition hall, and elected the following officers for the ensuing year:

President—Samuel S. Bailey.

Secretary—O. R. L. Crozier.

Treasurer—George C. Fitch.

Executive Committee—John Porter, W. W. Anderson, Joel A. Simonds, W. P. Mills, and W. R. Cady.

The Society adopted unanimously a resolution endorsing the action of the retiring officers, and thanking them warmly for the energy and indomitable zeal displayed in the interests of the Society.

Thanks were also given to the speaker for his excellent address; also the Glee Club for some good singing.

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ADDRESS

At the Eleventh Annual Fair of the Kent County Agricultural Society, Sept 30, 1859, by Rev. S. S. N. Greeley.

MR. PRESIDENT AND GENTLEMEN:

Most unexpectedly to me, a few days ago, came the application of your Committee that I would appear before you in the address on this interesting anniversary. I would not have had the presumption to appear at all, were it not that it was urged as an argument, that repeated efforts

on your part, to interest us all, through some orator from abroad, had entirely failed, and then, though so late in the day, you were encouraged in coming to me "from the full conviction you had, that somehow I had the faculty, on any and all occasions, of *going off without being loaded.*"

Gentlemen, I could wish that I had had better command of my time and circumstances, even since your application, that I might have *loaded*—or, made preparation that would be better worthy of this hour, than I have made. And yet if my language shall prove inadequate to utter it, shame on me if my soul fails to gather inspiration from these present surroundings, and from the very spirit of this occasion.

This is the anniversary of one of the most important and honorable of our Associations. This is the Agricultural Society, whose area of operations and quickening influence extends over a large county of our growing State. It is the Farmer's Association; the men who constitute the very bone and sinew of society; the men of toil-hardened hands and warm hearts, through whom the treasures of the earth are opened up, and all the people are fed and nourished. How can we too honorably appreciate the farmer and his profession? Where is the statesman, philosopher or politician so blind as not to perceive that, should the plow be left to rust in the furrow, and the husbandman cease from his toils, even but for a little period, not only would these professions cease, but life itself? Over all this beautiful earth, so teeming with riches, the pall of desolation would be wide and deeply spread, like the curtains of midnight.

It is the quiet, patient *farmer's toils* that fill the golden spoon of the capitalist. It is his labor that builds and freights the proud argosies of commerce; that sustains our manufactories, and spreads, the wide earth over, that network upon which the iron charger annihilates space, and along which the light wings of heaven convey swift messages of love and hope, literally from the river to the ends

of the earth. There is not a scheme of improvement, there is not a project of national achievement, prosperity or aggrandisement, that can be carried forward and consummated without the aid of the farmer.

And here, to-day, are the farmers' wives and daughters. Looking through the halls of exhibition, ye shall know them by their works; and the sons are here the future husbandmen and husbands, who shall hold the plow and guide and sustain the interests of the household and the State, when the fathers and the mothers have ceased from their labors.

But while this Association is primarially agricultural, it reaches out also and embraces all departments of mechanical and artistic industry. I look around to-day on this assemblage, not only of interested laborers and artisans, but the products of their skill, although silent, are yet eloquent. I seem to hear the hum and crash of the spindle and the loom. I see the glistening vessels and the luscious chemical changes of the dairy. I hear the cheering sound of the hammer and the saw; I hear the sharp clang of the anvil and the roar of the furnace; I feel its hot blast as its glowing liquid is poured forth to receive its thousand forms of *solid* utility.

Then, in the quiet walks, I see the busy needle, the awl, the knife, the shears, in skillful hands, evoking from the web or skin our needful covering from the winds; the adornment of ever changing fashion, or the wondrous figures of the tapestry. I see here to-day, too, the evidences that the merchants that we honor are also enlisted in this Society and its exhibition. Shelf goods, in silks, woolens and cottons; in iron, brass and tin; (all of which you may have in exchange for "tin;") and then, again, rich gems from the Press are here, within and without most excellent; and the artist has brought from his shaded studio the beautiful forms his pencil has fashioned—and he, also, who catches sun-beams and shadows; and, amid the sweet

perfume of the garden, I see Eve's fair daughters have been walking and culled and fashioned sweet garlands of flowers.

But, gentlemen of the Agricultural Society, it is not only the cheering sight of this successful exhibition, doing exceeding honor to a Society, even yet in its infancy, but the place of your exhibition, in itself new, and secured by your own efforts as the Society's Fair Ground, well may awaken in your every breast, satisfaction and pleasure. For the first time you hold your Annual Exhibition on your own ground; pushed forward to its present adaptedness with most commendable energy, within the year, capable of being made an area of exceeding beauty, and as a possession, worthy of its object, and of your zeal and sacrifices.

I have felt it a peculiar honor conferred upon myself to receive your appointment to be the orator at the first annual fair upon the new grounds. And now, with your permission, permit me in your name to set apart and dedicate this enclosure and whatever acres may at any time be added to it, to the high ends of agriculture and the useful arts. Let nothing desecrate it—let no ruthless hand deface its buildings, or destroy the trees which the Great Hand has already planted for you for shade and beauty. Here, from year to year, let industry bring her products. Here let the herds and flocks tell of rich pastures and kind and successful husbandry. Here let the trades and agriculture, let professional lore, the men of thought and study, from year to year, meet and mingle together, and learn increasingly to feel their oneness and mutual relation and dependence. Here, beneath the deepening shadow of these growing trees, let labor rest for a little season, and as in a calm and welcome Sabbath, gather fresh courage for future undertakings. And, as annually the blessings of the harvest and the success wherewith a Divine Providence has crowned every de-

partment of labor and arts, shall be made apparent in the appointed days of exhibition, may the assembled people acknowledge that Providence with devout thanksgiving. Here may it never be forgotten that all our wisdom to plan and success in achievement is of God. God is in the rain and in the sunshine, and the changing seasons of the rolling year. His wisdom prompts all inventions, all discovery, all skill; and in the garden or the field, as in the field that is spiritual, Paul may plant and Apollos water, but it is God only that giveth increase. "*He* crowneth the year with His goodness, and His paths drop fatness."

Thus, in a becoming spirit, and under circumstances of increased encouragement, may multitudes here gather to the Feast of the Harvest from year to year. And when we that attend to-day this opening festivity shall be found no more among the living, may generations yet unborn reap the benefit of our labors, and looking back to this auspicious beginning, bless the memory of those whose liberality and energy secured for them this ground, which we have now dedicated to AGRICULTURE and to ART.

And now, gentlemen, a few words upon the great topic of farm culture and the highest development of the capabilities of the earth, through well directed husbandry.

There are multitudes of topics on which we might dwell for hours with profit, for agriculture is an extended science, or the practical application of many scientific principles, on which every man ought to be well informed. Let none of you entertain the foolish prejudice which multitudes have cherished against what has sneeringly been called book learning, nor can I believe it to be the habit of Michigan farmers, whose appreciation of the value of scientific education for their business, has called for the establishment of an Agricultural College.

I recollect at the State Agricultural Fair in New Hampshire, in 1851, Wm. S. King, Esq., of Rhode Island, said in an address on this topic, that "science had been a

great bugbear to plain farmers, and a lion in the path of agricultural advancement."

Widely in our land "the false idea has obtained that a scientific farmer must be one who goes a-field with his mouth crammed full of hard words, his coat tail stuffed with learned treatises, and his hands filled with gallipots from the drug stores, with which he is to make senseless and profitless experiments."

No, it is not such scientific farmers that we desire to see, if, indeed, such are ever seen, but what we urge upon you is that cultivation of science through which your working out its eternal principles in well directed labor, shall correct what is wrong, and enhance the productiveness of your farms a thousand fold.

It is a fact that some farmers raise a vastly greater crop in a given year than their neighbors near by them, and with the same kind of soil and under the same sun. It is a fact, not uncommon, that one farm shall be found equally and increasingly productive from year to year, while a neighboring farm, of equal value at the start, will be found fading out and growing less productive as years roll on. Now, why is this? There must be some reason, certainly, where each has enjoyed an equal amount of labor. And is not this *just* the reason, that one man has worked his farm intelligently, supplying the waste of his crops by appropriate nourishment, and bringing every kind of well directed aid to the original powers of nature, while the other has just gone on in the same blind, prejudiced manner in which he first started?

We live in a day when none are prevented from being intelligent in all the details of their vocation, whether agriculture or the arts.

Sound scientific attainments are not to be despised. The knowledge of science, (book farming, if you please,) which, made practical in all the daily routine of calculation and labor, shall give a man ten fold of actual com-

pensation beyond the mere ploddings of willful ignorance and blind stupidity. It is not practical science, *applied knowledge*, that ever should be looked upon contemptuously. The mere walking encyclopedia of science, indeed, who lives wholly by books and ignores experience and common sense, is quite another being. I once heard of such a specimen, and if there are more of them, then we do not urge that you should copy them.

There was a thriving store-keeper in a certain country village, who had lately added to his articles of trade a department of hides and leather, and as an appropriate sign had drawn a calf's tail through a small knot hole, leaving the bushy end hanging down. He began to notice on several different days, a thin studious looking man, neatly dressed in black, and wearing gold spectacles, intently observing, hour after hour, this pendant tail.

One day he determined to speak to him. "My friend," said he, at length, as he saw him coming, "do you want to buy hides?" "No," abruptly answered the observer, without moving his eyes from the caudal appendage.

"Are you a drover? Do you deal in cattle?" "No, sir, I am a philosopher, and I am trying to satisfy my reason *how that calf got through that knot hole!*"

These are the men that have brought ridicule upon science, instead of concentrating it upon themselves.

Though not, as you know, an agriculturist by profession, yet you conferred upon me the honor of addressing you two years ago, at your anniversary. I take interest in this noble department as underlying all others, and I remember in that impromptu address to have touched upon a point on which my mind has not changed, but has gathered but increasing conviction by still further observation. Many farmers are ambitious to own *too much land*, and to bring under cultivation more than they can cultivate *well*. Thus they make slaves of themselves, and

actually depreciate the land from its natural condition, and it tendeth to poverty.

I took a tour a few weeks ago up the Mississippi into various parts of Minnesota. The country and the soil are beautiful. But I heard of men, all along, who had originally grasped at so much land, that now, in the progress of time, they find themselves utterly unable to pay for it, and would be thankful to sell half of it at the original government prices, with all their improvements thrown in, for the sake of keeping the other half, and when they can effect this, it will be money in their pockets.

Ex-Gov. Boutwell, of Mass., lays it down as a position which is true to an extent much beyond the common opinion, that the cost of a crop per ton or bushel is diminished as the aggregate per acre is increased: that is to say, a bushel of corn at twenty bushels per acre, costs more than a bushel at eighty. The same is true of every product of the land.

"Our Farmers," says the Hon. Increase Sumner in addressing the Massachusetts Berkshire Agricultural Society, "seem to think that the fertilizing capacities of the ground are all self-creating. They do not remember or appreciate the great fact that every crop harvested from the field takes from that field forever its full portion of fertilizing properties. For the abstraction of these properties restitution is demanded. The demand is unheeded, and impoverishment and sterility are the results."

Let us view these results. Take the State of Massachusetts. She has an area of seven thousand two hundred and fifty square miles. By the reports of the valuation committee to the State Legislature, in 1851, it appeared that since 1840, there had been added to the lands under improvement, more than three hundred thousand acres. Of mowing lands, more than ninety thousand acres, or nearly fifteen per cent., and of tillage land, more than forty thousand acres. Yet with all this extension, the

hay crops had increased only three per cent., showing a relative depreciation of twelve per cent., and in the grain crops there had been no increase, but an absolute depreciation of *six hundred thousand bushels*. And although the pasturing lands have been increased more than one hundred thousand acres, yet there had not been scarcely any augmentation of neat cattle; while in sheep, there had been a reduction of more than one hundred and sixty thousand, and in swine more than seventeen thousand. And after such an exhibition of facts, the Board urge the necessity of Agricultural Education. Remember, this was the authentic, carefully prepared Report of the Valuation Committee to the State Legislature.

On turning to the reports of the Patent Office, we are furnished with pretty marked items respecting the State of New York. In that great State, in 1845, there were under improvement eleven millions seven hundred and thirty-seven thousand nine hundred and sixty-eight acres of land. In 1850, twelve millions four hundred and eight thousand nine hundred and sixty-eight acres—making an addition in five years, as you perceive, of six hundred and seventy-one thousand six hundred and ninety-two acres.

What, now, was the gain to that State by this Agricultural scratching-over all this added territory of farming land? Why, simply the gaining of a dead loss, as appears by the returns in figures to the Agricultural Bureau at Washington. Here is the decrease of crops and animals, comparing 1850 with 1845: Potatoes, 7,255,056 bushels. Peas and beans, 1,182,054 bushels. Flax, 1,956,485 pounds. Wool, 3,793,527 pounds. Wheat, 270,724 bushels. Buckwheat, 450,724 bushels. In regard to animals, they diminished in numbers in the above years: Horses, 58,141; cows, 68,066; other cattle, 127,525; swine, 566,092; sheep, 2,990,624.

If we were to extend examinations throughout the northern and middle States, results not more flattering, doubt-

less, would be discovered. With regard to the southern States, facts known and frankly acknowledged, are not more gratifying. A distinguished southern Agriculturist prints his convictions thus: "The great error of southern Agriculturists is the general practice of exhausting culture; the almost universal deterioration of the productive power of the soil; which power, is the main and essential foundation of agricultural wealth. Were it not that the recuperative powers of nature are continually operating to repair the waste of fertility caused by the destructive industry of man, imperfect as it is, all these southern States would be barren deserts." With large plantations exhausted under the shirking, forced and wretched influence of slave labor, how can it be otherwise? I hope, gentlemen, none of us will feel called upon to go down and chastise any of our southern brethren who take the liberty to write and print their honest feelings and convictions. But I must close this topic; and I cannot do it better than by urging upon your thoughts that there is a world of truth and thrift and agricultural comfort and prosperity in that line of the old song,

"A little farm well till'd."

And now one word in this connection, on fertilizers and their uses. It is astonishing, it is painful to one that examines, to see all over our land, through want of a little scientific knowledge, or through heedlessness and ill management, the waste of manures. I would like to ask any farmer if he supposes there is a single particle of matter, vegetable, animal or mineral, that was ever furnished or nourished by the land, of which that land has not special necessity that it be returned to it? Treasure up every particle of solid or liquid matter that can enrich and nourish your lands. Let nothing escape you. Forest leaves, wash of the streets in the way-side gutter, turf and sods, decayed wood and brush, chips and shavings, earth from the wood-shed and barn-yard, the drip and cleanings of

stables, the hog-pen, vault, pigeon-house, poultry-yard and ash-bin; all have their uses. So, every old bone, (I have seen whole horses lying round in the pastures) oyster-shells, clam-shells, old woolen rags, scraps of leather; all are manures and capable of being turned into gold. And yet, how many think nothing of them, and at the same time pay out money to buy fertilizers!

And then, again, how many barns do we find that have preparations on purpose for the care of manures? How carefully do we find proper absorbents furnished for the preservation of all enriching liquids, such as clay, plaster, charcoal, peat-earth, saw-dust, leaves, &c.? The manure of a dozen fowls, well saved and mixed, will feed a large garden; and that of a goodly flock of hens and pigeons, well mixed and composted, is sufficient for a small farm. If any man here doubts it, let him try it. And then, "every farmer's barn should be provided with large tanks on purpose for the preservation of liquid manure; and yet this is one kind of economy that has been almost entirely overlooked by farmers. Probably, even the best of our agriculturists, lose nearly half the fertilizing elements of the animal excrementitious substances, before employing them upon the soil." Look at this statement which I have laid up; it seems to lay before these farmers, here in Michigan, to-day. They are facts which science has carefully searched out and demonstrated: "If the urine of a single cow, for a single year, were collected it would furnish about 672 pounds of solid extract, which contains as much nitrogen, alone, as 560 pounds of the best guano from the islands of the seas; and so large a quantity of potash, that, by combustion, it will yield about 170 pounds of potash, worth in commerce from twenty to twenty-five dollars." In Flanders, in view of these facts, the annual urine of a cow is taxed at three guineas, or about fifteen dollars. There, in Flanders, agriculture has reached its highest perfection, and they understand this matter. How much

have we understod it? A celebrated English farmer states that he has obtained far greater effect in manuring meadow land from 175 pounds of sewer-water from the city of Edinborough, than from 336 pounds of stable manure, and the same quantity of guano as stable manure, with which he dressed three equal parcels of land. And I see, lately, in the papers, that the great city of London is taking measures to save the enormous drainage, which has been passed heretofore, through the waters of the Thames, and forever lost in the depths of the ocean.

Let us understand that there is no wash and outcastings from the house, not merely on Mondays which are dedicated to soap suds, but every day, which are not worthy of careful preservation. Let me give you an illustration: In a certain village a gentleman rented an old house, connected with which was a garden that had been drawn upon by different tenants, without dressing or care, till it was completely exhausted. He had, himself, neither horse, nor cow, nor pig, nor anything to furnish manure; nor could he find any. Next door to him lived the village doctor, who always had the finest garden in the whole town. The spring opened and the doctor began his garden, and the new neighbor began his. A few weeks went on, and the vegetables began to appear. One evening the doctor walked over into his neighbor's grounds, where he saw him busy with a watering-pot, and was surprised at the thrifty growth of everything that had been sown. "I thought this old garden was used up," said he; "but, really, you are getting life into it somehow." They chatted awhile together, and the doctor went along. Some five or six weeks after, the doctor stepped over again, and stood completely astonished. "Now," said he, at length to his neighbor, "I should like to know the secret of your power over vegetation. There is not a man in town that has pretended to equal me in successful gardening, and now, here in this exhausted ground, you have not a single department

or vegetable that is not beyond mine altogether. I would really like to know how this thing has been done." "Well, Doctor," said the neighbor, "if you will just walk round with me to the back shed, I will show you my fertilizer!" They went round the house together, to the extreme end of the wood shed, and on opening the door, there stood a hogshead; pointing to it, he said: "There it is, Doctor," and the history of it was this: Being fond of a garden, and having no manure, he had called upon his wits to supply the demand, as far as possible (probably, moreover, he was a ready Yankee). In the early spring he procured this water-tight hogshead and set it up in the shed, and then requested all the members of the family, every day, in all washings and emptyings, instead of pouring down the sink-spout or elsewhere, to make that hogshead the receptacle. Every evening, with an old pail and watering pot, he carefully wet down his garden beds from this reservoir, beginning each time where he left off the previous; and the result was, that with no other manure, he had the garden that surprised the Doctor and surprised himself.

Four years ago, when in Massachusetts, I rented a neat little cottage. One day the sink spout would not discharge. My landlord came with his men and dug down to the drain and took off the first board length of it, when there was revealed a perfect solid casting, like iron in a mould, filling all the drain as far as it had been opened. It was a black chrystalline extract of soapsuds. We uncovered the whole length of the drain and it was alike filled. At the end of the drain down through the entire yard was a sunken hogshead without bottom. Here, for years, the water had been quietly filtering away, leaving a similar deposit. It might have been three feet in depth. I begged my landlord just to leave that hogshead to my management. I went to a store and got a small dry goods box, and taking out the bottom, it furnished me with a cheap and strong curb. This I sank till it rested on the sunken hogshead. I then

filled it round with dirt to the ground level, floored over the top and hung a lid. Thus I could open it at any time, for the benefit of the garden, which was near by—and do any of you suppose that I had to buy manure, or search for imported guano that year? No, gentlemen!

There is one delightful department of agriculture which I speak of only to cheer on and encourage the beginnings which many of you are making, viz: the raising of choice fruits. I have never seen finer apples, pears, plums, peaches, grapes, strawberries, (and what profusion!) and other excellent fruits, than I have seen and tasted in some of the orchards and gardens of this region of Michigan. Who has not been surprised at the rich display in the lower hall at this Fair, to-day? (By the way, gentlemen, I have brought my basket as I came over this afternoon!) It is true that we are subject to droughts and untimely frosts, and various discouraging influences, yet we always seem to come out in the most trying years better than we feared, besides having our good years of unbounded productiveness.

What is there more desirable than good fruit? How little care it requires in proportion to the benefit? We are here newer than the southern portions of the State. I have not seen many orchards worthy of "special mention," but we have some that show what can be done; and I am glad to know that numbers of you are setting out young trees. I was the other day in the beautiful orchard of F. B. Gilbert, Esq., and noticed as I stood under the loaded limbs of luscious fruit, how good care and wise husbandry had its relation to the treasures that were ripe for the storehouse. The soil was not matted down and neglected, and every tree looked as though it had a new suit of Sunday clothes every day in the week—the bark scraped, cleansed, washed, almost shining. Mr. Wm. W. Anderson, of Walker, a member of this Society, has, too, a very fine orchard, worthy of favorable notice; and of some

of his choicest apples I would make very greatful mention, for they have just been deposited in my basket! I wish there was a full hour in which to talk of fruit and fruit culture; but there isn't.

Before entirely leaving this topic, permit me to say a word upon ornamental trees. When the summer heat comes on, in the thronged city, in the field or pasture, or sheltering the rural cottage under the arms of their friendliness, how grateful is the deep shadow of trees! How many beautiful villages would be at once shorn of their principal attractiveness, if deprived of their trees. Have you ever visited Northampton, Hadley, Pittsfield, Great Barrington, and various other towns in Massachusetts; or Hartford, or New Haven, (the city of elms) in Connecticut? Have you ever strolled at morning, noon or eve, along the beautiful malls of "the common" in Boston? Think, then, what would be the desolation, the blotting out of beauty on which the eye feasts with delight, never wearying, if these trees were by any calamity destroyed.

Our Michigan town of Kalamazoo is beautiful—not from the fact of wide and level streets—not from any splendor in the architecture of its private residences or business houses, but because its founders had the good sense to locate it in an extensive grove, and spare *every tree* as the Great Hand reared it, just so far as it could possibly be done. Blessings will be upon the heads of those fathers to the latest generation. The city of Manchester, N. H., that has come up with such a wonderful growth, numbering now some 25,000 population, started right, in the matter of ornamental trees. The city is yet young—but the perfectly splendid growth of trees through all the town, lining every street, every avenue, is a sight to look upon. A public sentiment has been educated, and is now a controlling one, and excellent. No sooner does a man open or extend a street, or build a house, than *it is expected of*

him that he will forthwith set out trees. Thus, while each man labors off against his own house, the work is done of beautifying a whole city.

I remember in Massachusetts, some instances, within a few years, of the successful transplanting of forest trees of full and sturdy growth. They were taken up in the winter, when the dirt was frozen to the roots. I think this experiment is worth being undertaken by every man who has a homestead to adorn. A gentleman from the South told me awhile since, that in his section they have been removing forest trees with such success, that they saved ninety out of a hundred. The way is this: In late autumn they dig a trench around the tree to be transplanted, just outside of the extreme ends of the roots, and fill it in with rich compost. Here is nourishment which the tree does not need, and it expends itself in forming hundreds of little balls or ganglions of suckers, like balls of sponge all over and under the roots. In the early spring the tree is removed to its destination on large wheels, set in position, and all these new suckers commence their work, and the tree goes on as it nothing had happened to it. I shall feel if, by a few words, I can incite any of this audience to give earnest attention to this subject, which, though *shadowy*, is yet *solid*, I shall be well rewarded. The man who plants a single tree lives not in vain. Long after he has ceased from among the living, his memory will be *green* and *flourishing*.

I said at the opening that the wives and daughters were here to gladden this Annual Festival. Let me not pass them by. How vital are the prudence, wisdom and economy of the house-wife to the prosperity of the farmer, nor of him only, but of every man. There is an old proverb that, "A careless, thriftless wife, will bale out of the window with a teaspoon, more of valuable income than the husband can pile in at the door with his barn-shovel." That is a great and wide subject, the sphere of the

house-wife, and the fitting education for her responsible position. Many are the cares and anxieties that come upon her, and much she needs to be sustained by the kindliest sympathies. Without her no man is more than half a man, and many a wife is *the* man after all, throughout the farm and the shop, and all the details of business. In my western travels this summer, I was in a family where I saw a wife who, with all becoming modesty and affection as a wife, had committed to her excellent judgment by her husband, the principal management of a large and beautiful estate. She selected the hired men; she allotted to each his daily task. Her husband asks her at what time and which portion of the farm shall be plowed first. She is like a finished steam engine, mighty, yet making no noise. Now, many men would not consent to this, but still we had better set it down that these women are pretty shrewd!

Flint's Western Review, I remember, once contained a capital article on the education of daughters, in which the writer urged particular attention to the homely and practical, above and beyond the merely ornamental. "There are thousands of dear, delightful ones," says he, "in all our land, the very roses and ottar of life, who like certain sweet flowers we read of, know neither to toil nor spin. I see thee, pretty fair one, sitting at the piano, dinging at wires as though thou wouldst hammer out not only music, but every desirable possession in life. Canst draw out treasures from thy mind also, rich gems of thought, or stores of solid learning from profitable books? Canst cast accounts? Thou wast a chemist, I remember, at the Seminary examination; canst compound, prepare and bake a good pudding? a good loaf of bread? Canst ply the needle skillfully to *darn* and *patch* as well as adorn the parlor walls with tapestry? How is this?"

Before I close, I wish to recur to a subject, certainly of no little local interest to the members of this Society, and

on which some of you have of late been not a little exercised in mind. You have just taken possession of these new grounds for your annual exhibitions. For what other "exhibitions," and to what extent shall the Society permit these grounds to be used? I know some of you are anxious for any instruction or suggestions on this point. I shall give, then, with perfect honesty and candor, my own views—asking none of you to concur in them if they are not correct or approved of your consciences. There has been a good deal said, and published also in the daily papers, about the "Horse Show," which came off some three weeks ago in this enclosure. Now a horse show is proper, and a trial of the speed of the horses, within due bounds of mercy, is just as proper as a trial of draught horses at a burden, or of cattle at the plow. But to my mind, there is a difference between a trial of speed between fine horses on a carefully prepared course, to ascertain their step and fleetness, and *running of races* on the same course *for sweepstakes*. Here is betting—the risking, the winning and losing of money, (and often large amounts) on the hazard of A. B. or C.'s horse getting first to the goal. Now, the fastest horse out of any number, may, at any given trial, fail to win the race. A thousand casualties may come in to prevent it—a sudden illness, a sudden sprain, the loosening of a shoe, the prick of a nail, a little shy *jockeying* by competitors, &c., &c.,—all may turn the scale against any vaunted champion of the course. What is it, but the uncertainty, that underlies the betting? Of course this is it! No man would bet against a horse that he knew would win. I ask you then, gentlemen, in what respect this differs from betting on the uncertainties of the cut or drawing of cards, or shaking or throwing of dice? What is it but gambling, through the agonized muscles and strained nerves of horses, instead of by cards, or dice, or roulette? I cannot see the difference—and to those who are much in it, I am told it is just about as exciting—and

tends to foster a passion for all kinds of games of hazard. And then, again, look at the accompaniaments of all established horse races and race courses. I do not think it at all to be coveted by any community to own within its limits the best race course. Whenever races come off, who are the marked features in the crowd but every Short-boy, every black-leg, every bruiser, every Peter Funk, that all railroads and conveyances can bring from all parts of the country?

Had I been at home during the recent Horse Show under the auspices of this Agricultural society, I would have looked in upon it with as good a conscience as I have come to the exhibition to address you at your Agricultural Fair to-day. I would be pleased to see what Michigan can show of fine horses. It is a noble animal. I was returning from the east on the last day of the Horse Show, and first read a notice of it in a paper, in the cars. The next day, after reaching home, I learned the grounds were still open. Two little boys, that day, in my family, had gone over with an older companion, but toward noon I became anxious about them and walked over. I learned that some "distinguished horse flesh," that had been here for the two previous days, would not appear, nor would there anything be seen but horse-racing. The greater part of my stay was the time of intermission, and all that I saw in the little time that I remained afterward, only deepened my convictions on this whole subject, and prepared me to speak to you to-day, just as honestly and frankly as I have presumed to do. I do not suppose all in this crowd will approve—nor is any one but myself responsible for these sentiments, which I would respectfully dedicate to the whole class of horse-racers. My hope is, that this Society and the grounds will not inaugurate horse-racing as a popular entertainment in this city. But it is said the clergy and the deacons all attended! I doubt about that, and so do all of you, and I must confess

I thought it is a righteous cut upon me for being present at all, when one of the Judges, or some wag, called out from the stand to know "If I wished to enter?"

Gentlemen and ladies, I thank you for the undivided attention you have given me through this rambling and and hastily prepared address. In this, the eleventh annual exhibition of your Society, you may well rejoice. Many are present among you as spectators, who were not at all anticipating so fine a show as you have made. Such splendid fruit and vegetables, and the articles from the various departments of art and manufactures, are beautiful. We have had a trying and unusual year; frost in every month, and a drought in this region unparalleled. Still, let us take courage. The Lord reigns and works wonders of good for us, oh, how often, out of severest trials. There is a consoling article going the rounds of the papers, which most of you have probably noticed, that even such appalling, withering, consuming droughts as we have just passed through, though for the present, not joyous, are yet one of the wise arrangements in nature to draw up the deep deposits of salts and vegetable fertilizers, which the surface soil must have, but which no man can reach by digging or plowing. After such a term, the following years will be years of wonderful fruitfulness. So may it be—and so let us look forward and toil on with good courage. Providence, even now, has given us beyond our hopes, and let me urge upon you that are kindly cared for, in the winter that is nigh at hand, *to remember the poor.* Many will need your aid before another spring or autumn's harvest. It is written, "Blessed is he that considereth the poor." May you all secure the blessing, not only for this, but for all good and worthy deeds—and may Heaven ever propitiously smile upon this Agricultural Society, its officers and members, and long continue it, not only as a delightful association of intelligent agriculturists and artisans, but increasingly a fostering and quickening agency upon every industrial interest of the community.

MACOMB COUNTY.

R. F. JOHNSTONE, ESQ., *Sec'y of the Mich. St. Ag'l Soc.*

DEAR SIR—I herewith transmit to you the Tenth Annual Report of the Macomb County Agricultural Society.

Yours respectfully,

JOHN WRIGHT,
Secretary.

At a meeting of the Executive Committee held at Brooklyn, on Thursday, the 8th day of February, 1859, present Messrs. Phillips, Bentley, Wright, Weston, Bishop, Andrus, Davis and Butterfield.

The meeting was called to order by the President.

The Secretary announced that Messrs. Flagler, and Canfield, declined to serve as Directors,

And on motion,

Mr. Beach G. Whitney, of Bruce, was elected to fill the place of Mr. Flagler, and Mr. Austin C. Hewett, of Mount Clemens, to fill the place of Mr. Canfield.

Mr. Whitney being present, took his seat.

The Board took up the business of making out a list of premiums to be offered for competition at next Fair. Said business was however subsequently entrusted to a special committee, consisting of Messrs. Phillips, Bishop and Wright, with instructions to report at next meeting.

The Board then adjourned to meet at Romeo, on Tuesday, the 15th inst.

JOHN WRIGHT,
Secretary.

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EXECUTIVE MEETING.

Pursuant to adjournment, the Board met at the office of the Secretary in Romeo, on Tuesday the 15th day of February, 1859. Present, Messrs. Phillips, Bentley, Wright, Weston, Andrus, Bishop, Davis, Butterfield and Whitney.

The President called the meeting to order.

The minutes of last meeting were read and approved.

The Secretary, on behalf of the committee appointed at last meeting to draw up a list of premiums and code of rules and regulations for the Society's next Fair, reported the following, which were adopted.

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RULES AND REGULATIONS.

The Tenth Annual Fair of the Macomb County Agricultural Society will be held at Utica, on Wednesday, Thursday and Friday, the 19th, 20th and 21st days of October, 1859.

Membership tickets, one dollar each, may be had of the Secretary at any time previous to the Fair, or at the Ticket office on the Fair ground.

Membership tickets entitle the holder thereof, and also his wife, and his children under eighteen years of age, to admission to the Fair grounds at all times during its continuance, as well as to the right of entering animals or articles for exhibition, without any additional charge.

Single admission tickets will be for sale at the ticket office.

Admission tickets for carriages and wagons, price twenty-five cents each, will also be for sale at the ticket office.

No money can be received at the gates under any pretence whatever.

Complimentary tickets may be granted at the discretion of the President, Secretary and Treasurer, but such tickets shall not entitle the holder thereof to any other privilege besides admission to the Fair grounds.

Officers of the Society, Judges, &c., will be required to purchase tickets before entering the grounds.

No stock or other articles can be entered to compete for premiums until the owner thereof become a member of the Society.

The directors will have their headquarters on the Fair

grounds, where they will be ready to wait on all who wish to become members, or enter articles for exhibition, at 9 o'clock A. M., on Wednesday, the first day of the Fair.

Entries of stock or other articles may be made at any time within ten days prior to the Fair, by letter or personal application to the Secretary, at his office in Romeo, but no entry can be made after 5 o'clock P. M., on Wednesday, the first day of the Fair.

All stock, manufactures, or produce intended for exhibition must be on the ground and arranged in their proper places by 8 o'clock A. M., on Thursday, the second day of the Fair.

Exhibitors of thoroughbred animals in the classes of cattle and horses, shall be required to furnish pedigrees of such animals, and in all other classes of cattle and horses, pedigrees ought to be furnished as far as possible.

The standard authority of pedigrees of cattle shall be the English and American Herd Books, and for pedigrees of horses, the English Stud Book and American Turf Register.

No animal shall be entered in more than one class, except as specially provided in the premium list.

Manufactured articles (except farm implements) to compete for premiums must have been made in the county and within the year, and all manufactured articles, together with fruits, flower, vegetables, &c., must be the production of the exhibitor, or a member of his or her family, under the age of 18 years.

Cards will be furnished by the Secretary at the business office on the ground, for each and every article or animal entered for exhibition, designating the division, class and number of the article or animal; and the owner thereof will place the same upon or near such article or animal for the convenience of the judges.

Individuals will be appointed to receive and arrange articles and animals as presented with their numbers.

Animals or articles not entered and placed in their proper classes shall not be entitled to compete for premiums.

All animals brought from other counties shall be entered as foreign, and shall not come into competition with animals owned in the county, but animals owned in the county may compete with said foreign animals, although they may have been entered for competition in the county. When there is no foreign stock to compete with, no premium shall be awarded in the class.

Premiums on field crops, will be awarded by the Executive Committee at their session at the annual meeting, and every competitor must comply with the following requirements, viz: He shall deliver to the President or Secretary an accurate statement in writing, certified to under oath, of the character of the soil and process of preparing it, (including the quantity and quality of manure applied in raising the crop and the quantity and value of the seed,) also the nature and cost of labor employed and the total expense and product of the crop, with a view to showing accurately, the net resulting profit.

No animal or article entered for exhibition to be removed from the Fair ground until the close of the Fair, unless by permission of the executive committee.

No exhibitor shall act as a judge on the class in which he competes.

All premiums to be claimed within twelve months or forfeited.

Wagons and carriages shall not be admitted to the Fair ground after the first day of the Fair, without the payment of twenty-five cents for each, and horses shall not be tied up and left on the Fair ground unless entered for competition, but teams or single horses can be admitted with wagons or carriages for exhibiting before the viewing committee, without charge.

Hay and straw will be provided by the Society for animals on exhibition, but other food must be furnished by the owners themselves.

An efficient police force will be in attendance day and night during the Fair.

On the morning of Friday, the third day of the Fair, the awards of premiums will be announced in the following manner, viz: The first premium will be designated by a red card inscribed with number, division, class, owner's name, &c. Second premium, blue; third premium, yellow. These badges must be worn by animals in the procession of premium stock.

Any member of the Society violating any of the foregoing rules or attempting fraud upon the Society, shall thereby forfeit his rights of membership and be regarded as expelled.

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INSTRUCTIONS TO JUDGES.

All persons named as judges in the printed list, are requested to report themselves to the Executive Committee by nine o'clock A. M., on Thursday, the second day of the Fair, and as soon as possible thereafter, enter upon their duties. It is of the utmost importance that committees should be at their posts at the hour of meeting.

When a majority of a viewing committee are present they shall constitute a quorum, and be authorized to award premiums, and the first named on the list of those present, shall be chairman.

Premiums shall not be awarded in any evident case of fraud, nor when an animal or article is unworthy, even though there be no competition. When a committee deem an animal or article unworthy of a first premium, they may, if they think fit, award a second or third, without giving any higher premium in that class.

Whenever articles of merit, superior in their character,

are presented, and which are not provided for in the Premium list, the judges are desired to recommend discretionary premiums.

All draught horses and working oxen entered for competition, shall be tested by draught under the direction of the judges, and horses and oxen not so tested, shall not be entitled to premiums.

Stallions for all work, four years old or over, shall be required to trot four miles at the rate of eight miles an hour, drawing not less than one thousand pounds, including wagon.

Farm horses, four years old or over, shall be tested by draught on stone-boat.

The speed of trotting stock to be tested by time, and not by competition side by side. Distance not to exceed one mile.

Where tests are prescribed for animals, it is not expected that the judges will decide by those tests alone, but that they will award the premiums to the animals possessing the most desirable qualities in every respect.

Judges in the several classes of thoroughbred animals, are requested to be particular in seeing that the rule as to pedigrees be strictly complied with. Such pedigrees must in all cases, be satisfactory to the viewing committee, otherwise the animal shall be excluded.

Judges are requested to make their reports to the Secretary by three o'clock P. M., on Thursday, *without fail.*

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PROGRAMME.

First Day — Wednesday.

Entries will be made at the Secretary's office on the Fair ground, until five o'clock P. M., after which the books will be closed.

Second Day—Thursday.

At nine o'clock A. M., the Executive Committee will hold a meeting at the stand on the Fair ground, for the purpose of filling any vacancies in the viewing committees. All members of viewing committees on the ground will please attend this meeting, and a general attendance of members of this Society is also requested, that vacancies may be filled satisfactorily.

At ten o'clock A. M., there will be a grand cavalcade of all the horses and cattle entered for exhibition, on the track around the Fair ground.

At eleven o'clock A. M., the examination of Durham cattle, grade cattle, blood horses, and horses for all work.

At one o'clock P. M., the examination of Devon cattle, cross blood cattle, and draught horses.

At two o'clock P. M., the examination of working oxen, milch cows, and farm, carriage and single horses.

Third Day—Friday.

At nine o'clock A. M., the examination of the trotting stock on the track.

At ten o'clock A. M., there will be a grand procession of all the premium stock, headed by bands of instrumental music.

At one o'clock P. M., the competition for premium for vocal music.

After which—the "Address," and the competition for premium for instrumental music.

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Mr. Butterfield, on behalf of the "Utica Association for the exhibition and improvement of Stock," tendered to the Society the use of the Association's grounds, for the purpose of holding the next fair of the Society, said grounds to be fitted up in a suitable manner, at the expense of said Utica Association, and free of charge to the Society.

Mr. Davis stated that the citizens of Brooklyn preferred to deed to the Society a suitable piece of land, containing fifteen acres, to be fitted up at the charge of the citizens of Brooklyn; provided, that the Society's Fairs be permanently located at that place.

The President having vacated the chair, and the direction of the meeting being assumed by the Vice President, on motion of Mr. Phillips, it was

Resolved, That the Society accept the offer made by the "Utica Association for the improvement of Stock," and that the Fair of 1859 be held at Utica.

On motion, Mr. Sheriff Lamb was elected Marshal; Messrs. Phillips and Andrus, with the Secretary, *ex-officio* Auditors; and Messrs. Butterfield, Andrus and Weston, Business Committee.

The Board then adjourned.

JOHN WRIGHT,
Secretary.

TENTH ANNUAL FAIR, 1859.

The Tenth Annual Fair of the Macomb County Agricultural Society, was held at Utica, on Monday, Tuesday and Wednesday, the tenth, eleventh and twelfth days of October, 1859, upon the spacious and elegant grounds of the "Utica Association for the exhibition and improvement of Stock."

The arrangement of the grounds, and the buildings and fixtures erected for the occasion were excellent, and bore ample testimony to the liberality and enterprise of the citizens of Utica. The *track*, half a mile in circumference, is second to no other in the State, and afforded a fine opportunity for the display of horses, of which, as well as cattle, the show was unusually large and attractive. The total number of entries made was 711, being less than the number last year by 136. This deficiency was in the department of manufactures, the exhibition of stock being

fully equal to that of any former year, not only in number but also in character. It was with no small degree of pleasure that the citizens of Macomb county regarded this evidence of the vast improvement which a few years have produced among us. Owing to the lateness of the season, the show of fruits and vegetables was smaller than usual.

The weather, during the whole three days of the Fair, was most propitious, the attendance large and respectable, and nothing occurred to mar the success of the exhibition.

The Society was most fortunate in securing the services of Professor J. M. B. Sill, of Ypsilanti, to deliver the "Annual Address," which was characterized by the ability and practical good sense which mark the productions of that gentleman, and was listened to with profound attention throughout.

REPORT OF THE COMMITTEE ON SHORTHORN AND DEVON CATTLE.

The undersigned respectfully report to the President of the Macomb County Agricultural Society, that on Tuesday, October 11th, they performed the duties assigned to them as a committee of judges to award the premiums on Shorthorn and Devon cattle shown at the annual exhibition, and submit the following as the result of such examination:

The whole number of entries in the class of improved Shorthorns given in the list, were 27, and these were divided as follows:

1. Aged bulls,..... 1
2. Two year old bulls,..... 3
3. Yearling bulls,..... 1
4. Bull calves,..... 3
5. Aged cows,..... 7
6. Heifers, three years old,..... 2
7. Heifers, two years old,..... 3
8. Heifers, one year old,..... 3
9. Heifer calves,..... 4

In the class of aged bulls, there being but one entry, and that the well known "Young Splendor," there only remained the pleasant duty of examining his fine proportions, and the excellent condition in which this noted bull was shown.

In the two year old bulls, there were three entries, but only two were shown, namely, 23 and 392. The first premium was awarded to No. 23, and the second to No. 392.

There was but one yearling bull entered, No. 173, but he was well worthy of the first premium, and it was accordingly given to him. The pedigree shown by his owner was full, and proved that his good points were not the result of accident.

The number of bull calves shown was three, Nos. 19, 174 and 307. The first premium was given to 174, "Blucher," a very handsome white calf, presenting a fair promise to make a good animal. The second premium was awarded to 307, a very fair calf, of good form and very promising.

The number of aged cows presented for examination was seven, viz: Nos. 18, 175, 176, 177, 301, 302 and 393. On looking these animals over for the purpose of making selections of the best animals, and thus to save time, Nos. 175, 176, 301, 393, were at once picked out as presenting very superior points, although each of them was different in form and general character from the other. No. 175 was a large old cow, dark roan in color, fifteen years of age, of remarkable quality as a handler and with every evidence of being a good milker. She stood high, but with a deep body of rather a coarse character as to bone, and her head rather large, but presenting a certain impression of good breeding about it that made her a marked animal.

On asking for this cow's pedigree, it was found to show her as running back with great directness to an imported great great grandam, a grand-daughter of the celebrated

English "Favorite," and also direct from Hubback, on the side of the dam.

No. 176 was a cow of a very different mould, standing low, long and broad. She also was an old cow, white in color, but remarkable as possessing all those points of the Shorthorn that denote the quick fattener. She was very short on the legs, of a good depth of barrel, with great breadth and length of hind quarter, her prominent bones rounded off with masses of tissue that gave evidence of breeding and quality. Her head, horns and tail were much finer than those of 175, and she was much finer in bone, but at the same time of good size, and in every way a first class animal though somewhat old. She also presented the characteristics of a good milker. Her pedigree was also straight, being sired by Archer, 10 of the American Herd Book, and 3,028 of the English Herd Book, a bull owned by Francis Rotch, of Otsego county, New York, in 1840, and of the best stock known in New York at that date. Her dam, Delight, was by imported Devonshire 51 A, and is reported to have produced the milk from which 52 lbs. of butter was made in three consecutive weeks, being fed only on grass during the time.

Delight was out of Daisy, by imported Admiral, 1608 E.

She from Yellow Rose by imported Young Denton, 933 E.

From Arabella by North Star, 460 E;

From Aurora by Comet, 155 E;

Her dam by Henry, 301 E;

Her dam by Danby, 190 E;

And she from a cow by a son of the celebrated Favorite, 252 E.

There is not a bull mentioned in the list that is not an animal well known to breeders as having been valuable for qualities as a stock-getter, and they run back amongst the most approved families throughout the period during which efforts have been made to improve the breed of

Shorthorns. This your committee consider a very important point in placing a value upon *females* of this breed of cattle.

No. 301, was a handsome red cow, low set, with short legs, a deep round body, and with a straight back, and showing good evidence of qualities both as a milker and a fattening animal. She was fine in the bone, head and tail, and remarkably well filled out in the chest and fore quarter, without being coarse. The pedigree of this cow shows her as tracing back to the Kentucky importation of 1817, and she presents the form and general character of the cows bred from that stock. She was sired by Socrates, a bull purchased by A. Y. Moore, from the Shakers. The certificate as furnished the committee reads as follows:

"Pedigree of heifer named Cora. She is red and white, bred by ourselves, and sold to J. L. Kelsey, of Michigan, July 6, 1855. Calved Nov. 5th, 1854. Sired by Socrates, dam Susan Link—Red Rover, he by Cicero; his dam Miss Balonton, g. dam Anna Fisk, by Oliver; g. g. dam Beauty, by Mohawk; g. g. g. dam Pink, by Rising Sun, imported; g. g. g. g. dam Georgeann; g. g. g. g. g. dam Teeswater cow imported.

"Cicero, sired by Cossack 10th. Miss Balington sired by Henry, he by Lord Althorp, imported; his dam, Mary Clay, by Gold Finder imported; dam Laura by Oliver; g. dam Old Durham cow imported. Susan Link's dam by Ottley imported; he by Norfolk 2317 E. Susan's grandam of the importation of 1817.

"Socrates, was by Ben Gratz; dam Rock, by Emperor 2d; g. dam Lady by Comet; g. g. dam Flower by Oliver 2387 E; g. g. g. dam Duroc; g. g. g. g. dam by the imported bull San Marten; g. g. g. g. g. dam Miss Mott imported. [Both San Martin and Mrs. Motte, as the name should be, were of the importation of 1817.—*Committee.*]

"Ben Gratz was got by Young Oliver, dam by Don Juan, g. dam Belina 2d, g. g. dam Belina 1st, imported.

"Young Oliver was got by Henry Clay's Old Oliver dam by Sutton, g. dam Nancy Dawson, thoroughbred cow

"Signed STEPHEN EASTON."

The committee have deemed it their duty to analyze this pedigree, which is one of that showy kind, that is very apt to mislead. When reduced down to what it really is and should be, it shows as follows:

Cora, sired by Socrates;

Her dam, Susan Link, by Red Rover;

Her dam, by imported Ottley;

Her dam, a cow of the importation of 1817.

All the rest of the pedigree consists of a recitation of the pedigrees of bulls connected directly or collaterally as grandsires; but it will be seen that the direct descent of the cow on the female side is almost hidden in the mass of names linked in as above. We do not say this is done to deceive or impose upon any one; but this method certainly is not intended to bring out distinctly what the descent of any animal really is. Now let us look at the probability of the descent on the female side being correct.

Cora was calved in 1854, her dam being Susan Link. Supposing Susan to have been ten years old at this time, she must have been calved in 1844; and, again, supposing her dam to have been fifteen years old at the time Susan was calved, she would have been calved in 1829; and her dam being a cow of the importation of 1817, as stated above, must have been likewise not less than 13 years old. This is not impossible, but the manner in which the pedigree has been made out, casts a shade over this very important branch of the document, and your committee have thus considered the subject and presented the results, not with any disposition to be unnecessarily critical, but with an earnest desire to adhere as much as possible to the rules of perfect breeding. If the breeders of Macomb county are anxious and desire to raise the best improved Shorthorns, it is one of the best points of laying the foundation

of herds to be particular as to the females. A good bull may always be had readily, but his good qualities may be neutralized at any time by the use of imperfectly bred, or defective cows, and with such cows, it takes a long series of crossing and many years time, besides great experience in selection, before the herd can by any possibility be ranked as first class, and its progeny fit to be used as the progenitors of a race of improved stock.

No. 393 was a large red cow, of good style, well proportioned, brought into this State by F. McHardy, of Almont, from western New York. Her pedigree was not presented, but it was known to your committee, as having been publised in the Michigan Stock Register. Her general character in regard to size, form and quality, showed her a superior and well bred animal, though evidently of a family entirely different from either of the others.

In point of age, beauty of appearance and as cows for the immediate use of the farm, the two last named had every advantage, and one of the main questions which arose in the committee, was whether it was the duty of judges of this class of stock to decide upon the qualification of the animal as fitted for farm purposes, or as best fitted for the purposes of the breeder of pure improved Shorthorns. After some deliberation, it was decided that where premiums were offered for special breeds of animals, with a view to encourage their propagation and improvement, it was the animal best fitted for the purposes that it was the design of the Society to encourage. Hence 175 and 176 ranked above the other two, though older and evidently past their prime, yet not so as to be useless as the means of improving the stock of the county; and in deciding between these two cows, the first premium was awarded to 175, as it was considered that her points indicated the best milking qualities, and she might be considered also the highest bred, though not so good for grazing or feeding points as 176.

The third premium was given to 393, because in comparing her qualities as a breeder she was considered preferable as a dam, and more developed as a milker, though in fact it was difficult to decide. No. 301 being closer framed and showing a compactness that gave her the advantage in some points, and especially in feeding. This consideration weighed so strongly with the committee as to induce them to commend her very highly as well worthy of a special premium.

The three years old heifers were but two in number, 168 and 303, both very good animals, but 178 was awarded the first premium as showing a finer form, less coarseness about the head and neck, and having better general character as a female. There was little difference in quality; 303, in back, loin, flank and hind quarter, had slightly the advantage, but her head, horns and neck were not so good; she was awarded the second premium.

The two years old heifers were three in number, 179, 180 and 304. The first premium was awarded to 180, a great granddaughter of the first premium cow, though at the time of the decision this fact was unknown to the committee, and by an imported bull named Harold 2d, 1638 Am. Herd Book. Her chief competitor was 304, a very handsome heifer shown by Mr. Kelsey, but whose pedigree we have not on hand. The third premium was awarded to No. 179. According to the pedigree handed in, this heifer, Julia, was barely a few weeks over two years old, while her competitors were spring calves. She promises very well and we hope to see her again.

There were three yearling heifers exhibited, viz: 181, 305, 306. Of these, 305 was awarded the first premium, 181 the second, and 306 the third.

Four heifer calves were exhibited, viz; Nos 182, 183, 184, 308. The first premium was given to 182, and the second to 183.

Devons.

In the class of Devons there were twenty entries, which were divided as follows:

1. Bulls, three years and over, Nos. 88, 186, 489,..... 3
2. Bulls, two years old, No. 61,..... 1
3. Bulls, one year old, No. 187,..... 1
4. Bull calves, Nos. 196, 197, 198, 199,..... 4
5. Cows, four years old and over, Nos. 62, 187, 188, 189, 191, 192, 193,..... 7
6. Heifers, three years old, No. 194,..... 1
7. Heifers, yearlings, No. 64,..... 1
8. Heifer calves, Nos. 64, 195,..... 2

The awards were as follows:

Bulls three years old and over,				1st premium,....		No.	88
do.	do.	do.	do.	2d	"	"	186
do.	two years old,			1st premium,.....		"	61
do.	one year old,			1st premium,.....		"	187
do.	calves,			1st premium,.....		"	199
do.	do.		2d	"		"	196
do.	do.		3d	"		"	197
Cows, four years old and over,				1st premium,....		"	62
do.		do.	do.	2d	"	"	189
do.		do.	do.	3d	"	"	190
Heifers, three years old,				1st premium,.....		"	194
Yearling Heifers,				1st premium,.....		"	63
Heifer calves,				1st premium,.....		"	64
do.	do.		2d	"		"	195

The committee would go more into detail in this class, but the report is already extended to such a length, that it is not possible to give it more attention. In closing, however, we would remark that the design of the Society was to place before the judges the animals merely by their numbers and ages, and thus to leave them, so that the committee should have no bias from a knowledge of the name of the exhibitor. This principle seems to work

well on paper, and we have heard it generally commended; but in practice we doubt very much if it can be carried out. One of the points that should be known to the committee is the breeding of the animals. The request for the proof of any animal being pure bred, at once discloses the owner, and, besides, the owners are present to watch the progress of the examinations. We think, in this case, it made no difference, although the committee, in making out the report, would have been greatly facilitated by knowing the names of the animals to which the numbers referred.

From what we saw at the Fair of Macomb County, it is very evident that in cattle there must be a very great improvement within a reasonable time. Messrs. Phillips, Kelsey, Butterfield, Pierce, and some others, have each entered into the business of making an attempt to improve the stock of the county in the right spirit, and are desirous, as we know, of carrying out their attempts, by securing the very best stock to be had, for the purpose. When the improved breeds are first introduced into any locality, even then, grades are so much superior to the ordinary stock in growth and appearance, that the inexperienced are frequently willing to stop short, and come to the conclusion that they have reached all that is necessary; but a few generations soon tell them that in breeding, as in everything else, there is no point at which to stop. The highest class, Shorthorn or Hereford of to-day, is as different from the best that was known to breeders even thirty years ago, which is but three generations back, as is the railroad and its modern improvements to the old strap rail and it appendages. It will not do for the breeders of this State, if they mean to achieve any reputation, to begin at a point which the breeders of other States and countries have passed long ago, and to take up with second-rate animals to commence a herd; they should, on the contrary, be content with nothing less than animals which are

at the acknowledged head of the breed which they mean to keep and propagate, and in their efforts to improve they should themselves educate their eye and hand, so as to enable them to discriminate which of their stock should be raised alone for the shambles, and which is fitted to continue the race of improvement. Because a full bred animal has a calf, it is no reason why that calf may not prove totally unfitted, when it matures, for propagation, no matter what its pedigree. Every breeder should bear in mind the old proverb, so common to the spelling books of a by-gone generation, "A good cow may have a bad calf," and that an indifferent animal should be weeded out with as little loss to the breeder as possible, but out of the herd and stock it should go, and not be sold to strangers, so that it may come back like a bad penny to annoy the party who sold it, with its bad reputation, and the evil character it gives to the whole stock with which it may be connected.

R. F. JOHNSTONE, Detroit,
MARSHALL S. HADLEY, Oakland,
Committee.

Immediately after the delivery of the address by Professor Sill, A. C. Hewett, Esq., from the committee appointed to draft resolutions, reported the following, which were adopted unanimously.

Resolved, That the thanks of the Macomb County Agricultural Society are due to Professor J. M. B. Sill, for his able, interesting and instructive address.

Resolved, That the thanks of the Society be tendered to the Brooklyn Brass Band, for their efforts to add interest to the occasion. Also to Stow & Co's. Band, for their musical favors.

Resolved, That the thanks of the Society are due and heartily tendered to "The Utica Association for the im-

provement of stock," for the use of their spacious and beautiful grounds, and for their liberality in erecting the buildings and preparing the grounds for the exhibition, and to the ladies of Utica for the tasteful decorations given to the halls.

Resolved, That the thanks of the Society are cordially offered to Mr. Sheriff Lamb and Mr. George Washer, for the admirable manner in which they have discharged the duties of Chief and Assistant Marshals during the Fair.

Resolved, That in the abundant success attending the Tenth Annual Exhibition of the Macomb County Agricultural Society we see auguries of good, and that we invite the hearty co-operation and aid of all classes in all sections of the county, that thrift, enterprise and plenty may mark the future of the Society's operations.

Resolved, That a copy of these resolutions be transmitted to the several newspapers of the county, for publication.

The Society then adjourned to meet at Brooklyn, on Thursday, the 8th day of December next at one o'clock, P. M.

JOHN WRIGHT,
Secretary.

MINUTES OF ANNUAL MEETINGS—EXECUTIVE MEETING.

The Directors met at Brooklyn, on Monday, December 8th, 1859. Present—Messrs. Phillips, Bentley, Wright, Weston, Andrus, Davis, Butterfield and Whitney. The President called the meeting to order. The Treasurer's report was presented, accepted and adopted, as follows:

The Macomb County Agricultural Society,
In account with C. W. Weston, Treasurer.

1859.		Cr.
Jan. 1.	By am't of cash on hand,.....	$236 89
Feb. 26,	" " from Co. Treas.,	131 53

Oct. 12.	By am't cash for membership,	$297 00	
"	" " " admittance to Fair Grounds,	301 47	
			$966 39

1859.		Dr.	
Dec. 8,	To am't paid on Society's orders,	$857 95	
"	of cash on hand,	108 44	
			$966 39

C. W. WESTON,
Treasurer.

Examined and found correct.

GEO. W. PHILLIPS,
LOREN ANDRUS,
JOHN WRIGHT,
Auditors.

On motion,

Resolved, That the field-crop premium on potatoes, be awarded to William Moe.

Resolved, That the field-crop premium on ruta bagas, be awarded to S. B. Cannon.

Resolved, That the field-crop premium on peas, be awarded to S. B. Cannon.

Statement of William Moe, of Shelby.

I have raised, the past season, on half an acre of land, 147 bushels of potatoes. The land was an old pasture, broken up in 1857, and planted to corn; also planted to corn in 1858, and last spring was plowed the latter part of May, then dragged and planted the third of June. The rows were about three and a half feet apart, and the hills from two to two and a half feet apart; the crop was plowed once and hoed once, and dug the latter part of October. The soil was a sandy loam, with a clay and sand subsoil, and quite clean from weeds. There was no manure used. The expense was as follows:

To half day plowing,.....	$0 50
" planting,.....	75
" four bushels seed at 50 cents per bushel,.....	2 00
" plowing and hoeing,.....	1 50
" digging and drawing,.....	3 75
" use of land,.....	2 50
	$11 00

Value of Crop.

147 bushels potatoes, at 21 cents,.....	$36 75
Less expense and use of land,.....	11 00
	$25 75

I certify that the foregoing is a true statement.

WILLIAM MOE.

Sworn and subscribed to, before me, this eighth day of December, 1859.

C. F. MALLARY,
Notary Public.

—

Statement of the kind of soil, &c., upon which bagas were raised by me: The amount of ground was fifty rods; the kind of soil, sandy loam; it was plowed once in April; June 15th, there were eleven horse-cart loads of barnyard manure spread upon the above, and it was again plowed and thoroughly harrowed. After which there was sown upon the same, June 18th, three and a half pounds of baga seed, with a hand drill, a foot apart one way, and in drills the other.

Expense Account.

To plowing 50.100 acres land, at $2,.....	$0 55
" re-plowing and harrowing,.....	75
" eleven cart loads manure, 1s.,.....	1 38
" seed and drilling in,.....	75

To three days hoeing, 8s.,	$3 00
" three hands and a team one day, to pull and crib,	4 00
	$10 43

Contra.

By 252 bushels bagas, 1s.,	$31 50
" three horse-cart loads tops, 2s.,	75
Total value,	$32 25
Cost brought down,	10 43
Net profit,	$21 82

S. B. CANNON.

Sworn and subscribed, 6th December, 1859, before,
G. W. KNAPP,
Notary Public.

—

Statement of the character of the soil, &c., of ½ an acre of peas raised by me the past summer. The soil is sandy loam and clay, the clay predominating. It was plowed April 11, with a Romeo iron beam plow, eight inches deep; there was sown on the piece 1½ bushels of the green field pea, after which it was harrowed twice over; they were harvested with a horse rake, one of the revolving kind, and thrashed with a flail.

Expense Account.

To plowing ½ acre at $2 00	$1 00
" 1½ bushels seed, and sowing,	1 50
" harrowing in,	50
" raking,	50
" drawing and thrashing,	1 00
Total cost,	$4 50

Contra.

By 16 bushels of peas, at 8s.,	$16 00
" 2 loads straw, 4s.,	1 00
Total value,	$17 00
Cost brought down,	4 00
Net profit,	$12 50

S. B. CANNON.

Sworn and subscribed 6th Dec. 1859, before

G. W. KNAPP,
Notary Public.

On motion,

Resolved, That the Secretary is hereby instructed to communicate with Mr. Amander Ruby regarding certain frauds alledged to have been committed by said Ruby upon the Society, at its last Fair.

The board then adjourned *sine die*.

JOHN WRIGHT,
Secretary.

GENERAL MEETING.

The Eleventh Annual Meeting of the Macomb County Agricultural Society was held at Brooklyn, on Thursday, the 8th day of December, 1859, pursuant to the requirement of the Constitution, notice having been given by publication in the Romeo *Argus* for four successive weeks previous.

Present, a goodly number of citizens from all parts of the county, among whom the utmost harmory and good feeling were manifest.

The meeting was called to order by the President.

The Treasurer's report was read.

The Secretary presented the following statement of receipts and expenditures of the Society for the year 1859.

Receipts.

To am't from County Treasurer,.....	$131 53
" gross receipts at Fair,.....	598 47
Total receipts,.....	$730 00

Expenditures.

By amount premiums awarded, (after deducting ten per cent.,).....	$562 00
By amount paid for printing, Secretary's salary, Clerks, Gate-tenders and all other expenses,..	239 07
Total expenditures, ...	$801 07

Showing a deficiency of $71 07 to make up from the amount of cash on hand last year.

The Society then proceed to vote by ballot for officers for the year 1860, and the following named gentlemen were declared duly elected:

President—Geo. W. Phillips, Armada.

Vice President—P. M. Bentley, Macomb.

Secretary—Charles W. Weston, Utica.

Treasurer—C. F. Mallary, Romeo.

Directors—Ira H. Butterfield, Utica; Loren Andrus, Washington; B. G. Whitney, Bruce; Harlehigh Carter, Mt. Clemens; Harvey Mellen, Bruce; James B. St. John, Utica; D. S. Priest, Ray.

On motion, it was unanimously

Resolved, That the thanks of the Society are due to the Secretary, the Treasurer, and the other officers of the Society, for the able and highly satisfactory manner in which they have discharged the duties of their respective offices during the year.

The meeting then adjourned.

JOHN WRIGHT,
Secretary.

MONTCALM COUNTY.

Secretary of the State Agricultural Society:

SIR:—Below please find the Fourth Annual Report of the Montcalm County Agricultural Society, as required by law. The Society held its Fourth Annual Fair, Oct. 20th, 1859. The Premium awards were as follows:

CLASS I.

Horses.

Best stallion, five years old or over,	John D. Fargo,	$2 00
do. do. three " "	John Huff,....	2 00
do. colt, " "	Henry Berage,.....	1 00
do. do. two "	Ezra Satterlee,.....	1 00
do. do. one "	A. J. Satterlee,.....	1 00
2d best colt, " " " " "	.....	50
Best mare and colt,	Enoch R. Wilcox,.....	2 00
2d best " "	Henry Berage,.....	1 00
Best single horse and harness,	M. Rutan,.....	1 00
2d best " " "	John Huff,.....	50
Best span matched horses,	J. B. Chamberlin,.....	2 00
2d best " "	Stephen H. Warren,...	1 00
Best span roadsters,	H. B. Fargo,.....	2 00
2d best "	A. G. Stockholm,.....	1 00
Best span for all work,	R. C. Miller,.....	2 00
2d best " "	H. Van Allen,.....	1 00

Committee—A. Satterlee, John C. Mann, R. C. Miller.

CLASS II.

Cattle.

Best yoke working oxen,	Geo. Carpenter,.....	$2 00
2d best " "	James Taylor, Jr.,.....	1 00
Best yoke matched and trained,	R. C. Miller,.....	2 00
do. native cow,	Myron Rider,.....	1 00
do. cow and calf,	S. H. Warren,.....	2 00
do. bull, one year old,	S. H. Warren,.....	1 00

Committee—Morton Shearer, R. K. Divine, John Huff.

CLASS III.

Sheep.

Best Spanish Merino buck, A. G. Stockholm,..... $1 00

Committee—S. M. Fuller, George Lunn, S. Rossman.

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CLASS IV.

Swine.

Best boar, cross of Leicestershire and Suffolk, M. Rider,..... $1 00

Best sow, cross of Leicestershire and Suffolk, M. Rider,..... 1 00

Committee—Henry Satterlee, A. H. Monroe, J. D. Fargo.

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CLASS V.

Poultry.

Best coop of fowls, Dominic W. Divine,..... $0 50

do. do. turkeys, S. H. Warren,..... 50

Committee—A. G. Stockholm, H. Van Allen, D. Spencer.

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CLASS VI.

Fruit.

Best bushel apples, Ezra Satterlee,..... $0 50

2d best " Henry Satterlee,..... 50

Committee—B. Birch, Erastus Fisher, Henry Berage.

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CLASS VII.

Vegetables.

Best bushel turnips, Randall & Case,..... $0 25

do. half bushel beets, M. Rutan,..... 25

do. do. onions, H. Van Allen,..... 25

do. do. carrots, M. Rutan,..... 25

do. half dozen heads cabbage, W. Divine,..... 25

Best sample radishes, Geo. Van Ness,..... $0 25
do. half acre potatoes, Randall & Case,..... 1 00
2d best do. do. H. Berage,..... 50
Best five acres corn, Randall & Case,..... 1 00
2d best do. do. H. Berage,..... 50
Best five acres wheat, (thirty bushels per acre,) R. K. Divine,..... 1 00
2d best five acres wheat, S. Rossman,..... 50
Best acre buckwheat, Randall & Case,..... 1 00
do. half dozen citrons, R. K. Divine,..... 25
do. do. pumpkins, W. Divine,..... 25

The committee recommended as worthy of note, a sample of barley, by S. Rossman.

Committee—C. H. Randall, J. M. Wolverton, Jerome Fargo.

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CLASS VIII.

Dairy.

Best loaf bread, Mrs. C. C. Ellsworth,..... $0 25
2d best do., Mrs. Wm. H. Ellsworth,..... 15
Best 5 lbs. butter, Mrs. W. Divine,..... 25

Committee—Mrs. A. H. Monroe, Mrs. J. D. Fargo, Mrs. S. Rossman.

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CLASS IX.

Household Articles.

Best patch work bedquilt, Mrs. C. C. Ellsworth,.. $0 50
2d best do., Mrs. Wm. H. Ellsworth,..... 25
Best wool coverlet, Mrs. J. D. C. Seamen,..... 50
" pr. pillow cases, Mrs. Wm. H. Ellsworth,..... 25
2d best do., Mrs. C. C. Ellsworth,..... 15
Best cotton embroidery, Mrs. M. Rider,..... 25
2d best do., Miss Julia C. Ellsworth,..... 15

Best piece worsted work, Mrs. Wm. H. Ellsworth,.. $0 25
2d best do., Sarah Rossman,..... 15
Best netted tidies, Mrs. Wm. H. Ellsworth, ... 25
" piece leather work, Mrs. J. B. Chamberlin,.... 25
" pair wool socks, Mrs. Sarah C. Divine,..... 25
" " mittens, Mrs. C. J. Randall, ... 25
" white spread, Mrs. Wm. H. Ellsworth,..... 50
2d best do., Mrs. J. B. Chamberlin,..... 25

Committee—Mrs. C. C. Ellsworth, Mrs. Wm. M. Crane, Mrs. A. Satterlee.

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CLASS XI.

Best plow for all work, Livingston Patent, Maxted & Moors,..... $1 00
2d best do.,..... 50

Committee—P. G. Johnston, Wm. R. Martin.

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CLASS XIV.

Miscellaneous.

Best pair fancy work vases, Mrs. J. B. Chamberlin, $0 25
" corn sheller, J. D. C. Seaman,..... 1 00
" buggy rake, J. D. C. Seaman,..... 50
" ½ M shingles, Geo. Vaness,..... 50
" specimen penmanship, W. J. Wilson,..... 25
" specimen pen-drawing, " 25

The committee recommend the following articles as worthy special notice:

Brickley's Pattent Force and Lift Pump, Savans' Patent Thill and Shaft Coupling, Savan's Wood Bending Machine, Savan's Patent Buggy Hubb, and Bucley & Buckley's Patent R. R. Switch, exhibited by P. G. Johnston.

Committee—S. Sprague, Ezra Satterlee.

—

A letter from Hon. Alonzo Sessions was read by the

Secretary, saying that he should not be able to address the Society according to request, in consequence of severe indisposition.

On motion, the following persons were elected as officers of the Society for the year ensuing, viz:

President—Stephen Rossman.

Vice President—C. H. Randall.

Secretary—Joseph M. Fuller.

Treasurer—Manning Rutan.

Executive Committee—Manning Rutan, R. C. Miller, R. K. Divine, Henry Berage, John D. Fargo.

On motion, the several Supervisors of the different towns in the county were designated as Councilmen.

On motion, adjourned to the 22d Oct. inst., 1 P. M.

—

At a special meeting of the Executive Board held Oct. 22d, 1859, the following accounts were audited:

G. T. Woodworth, for printing,	$5 75
H. E. Light, for miscellaneous expenditures and services,	12 04

On motion, agreed to pay the full amount of indebtedness of the Society, and apply the balance of funds on hand as premiums.

Secretary reported the receipts of Fair as	$39 16
Unpaid tickets,	2 00
Amount due from Secretary previously,	15 19
Total,	$56 35

Indebtedness.

Order held by Geo. T. Woodworth,	$4 38	
" S. Rossman,	16 14	
" Mrs. H. Mann,	12	
Account allowed H. E. Light,	12 04	
" Geo. T. Woodworth,	5 75	
		$38 43
On hand to pay premiums,		$17 92

On motion, a committee was chosen to arrange a plan for the future operations of the Society, consisting of Messrs. H. E. Light, M. Rutan, J. D. Fargo, H. Berage, J. M. Fuller. Adjourned.

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ANNUAL MEETING.

At the annual meeting held December 10th, 1859, the committee appointed to arrange a plan for the Society, reported in favor of leasing grounds and fitting them up for the Society, funds to be raised for that purpose by selling life memberships at $10 each. After much discussion, the report was laid over till the next quarterly meeting of Society.

By invitation, A. Sessions delivered an address to the Society, at two o'clock P. M.

On motion, adjourned to the last Saturday in January next, for the purpose of Agricultural discussion.

STEPHEN ROSSMAN,
President.

M. RUTAN,
Treasurer.

OTTAWA COUNTY.

To the Secretary of the State Agricultural Society:

In accordance with the statutory law, I herewith transmit you a statement of the transactions of the Ottawa County Agricultural Society for the year 1859, as follows:

The condition of the Society is as prosperous as its most sanguine friends could have any reasonable grounds to expect. It is the owner of four acres of land near the village of Lamont, very pleasantly and conveniently located for the purposes intended by the Society—the place of holding its annual Fairs, and for the meetings of the Executive Committee, a very tasty and convenient office therefor having been erected upon the grounds.

The Fair grounds are surrounded by a substantial paling fence and provided with a large and commodious building for the exhibition of the products of domestic industry, the fine arts, fruits, vegetables, &c., &c., and further provided with a fine course for the exhibition of the *bottom* and *speed* of horses, and handsome movable picketings for pens for sheep, swine, &c.

The annual Fair of the Society was held on the 21st, 22d and 23d days of September last, at which there was a very commendable interest manifested by the hardy yeomanry of our county, in bringing forward articles for exhibition, entering their names as members of the Society, and lending a helping hand to promote the great and good objects had in view in the establishment of the Society. The attendance at the Fair was greater than that of any former year. Eighty-three persons entered their names as members of the Society, which is exerting a very favorable and happy influence upon the agricultural interests of our county.

The following table exhibits the receipts and expenditures of the Society for the current year, as per report of the Treasurer:

Receipts.

For membership tickets,.....	$83 00
" gate "	56 08
From Co. Treasurer,.....	263 91
" other sources,.....	44 15
Total,.....	$447 14

Expenditures.

For completing office on Fair grounds, fitting up grounds, and expenses connected with the Fair,.....	$377 85	
Paid printers' bills, stationery, &c.,.....	36 00	

Paid Prof. Fisk for Lecture at the Annual Fair,	$25 00	
Amt. in Treasurer's hands,	8 79	
		$447 14

The amount awarded for premiums at the last Annual Fair, (a list of which is herewith forwarded, to whom payable and for what purposes,) is two hundred and sixty dollars ($260.) These demands are in part liquidated, and it is believed that the Society will have funds sufficient to cancel the entire amount when the appropriation from the county shall have been received, now subject to the order of the President and Secretary.

The following are the officers elect of the Society for the current year:

President—Simeon Hazelton.
Vice President—N. C. Litchfield.
Secretary—N. W. Taylor.
Treasurer—Sylvester Luther.

All of which is respectfully submitted.

A. B. SUMNER, *President.*
MYRON HARRIS, *Secretary.*
M. HEDGES, *Treasurer.*

Dated, Lamont, Dec. 15th, 1859.

SANILAC COUNTY.

LEXINGTON, December 1, 1859.

R. F. JOHNSTONE, *Sec'y Mich. State Agricultural Society:*

SIR—Herewith connected we send you a statement of the transactions of our Society, the first year of its existence:

In accordance with a public call, a number of our citizens from different parts of our county, met at the court house in this village, at two o'clock in the afternoon of June 18th, for the purpose of forming an Agricultural Society.

On motion, Daniel Wixson was chosen Chairman, and W. S. Mills, Secretary.

The chairman briefly stated the object of the meeting, and after some remarks by W. S. Mills, J. Divine, and others,

On motion of John Sheldon, the following Articles of Association were adopted:

ARTICLE FIRST.

This association shall be called the "Sanilac County Agricultural Society," and its objects shall be the promotion and improvement of Agriculture, Horticulture, the Mechanic, Domestic and their kindred Arts.

ARTICLE SECOND.

The officers of this Society shall be a President, Vice President, Secretary, Treasurer, and five Directors, whose duties shall be such as usually pertain to such officers respectively.

ARTICLE THIRD.

The Officers and Directors shall constitute an Executive Board, for the management of the concerns of the Society, and shall have full power to conduct its affairs and transact its business, and fill vacancies in their body, and a majority of them shall be a quorum.

ARTICLE FOURTH.

Any person may become a member of this Association for one year by paying the Treasurer one dollar and subscribing his or her name to these Articles of Association, and may continue such membership by paying one dollar to the Treasurer annually thereafter.

ARTICLE FIFTH.

The annual meeting of the Executive Board shall be held on the second Tuesday in October, at which time the officers shall make their several reports, and which time shall be the closing of the fiscal year of the Society.

ARTICLE SIXTH.

The annual election of officers shall be held on the last day of the annual Fair, at the time and place to be designated by the Executive Board. The officers so elected, having accepted and qualified, shall enter upon the discharge of their duties immediately after the adjournment of the annual meeting of the Executive Board and shall hold their offices for one year and until their successors are elected and qualified.

Some twenty-five of those present signed these articles and then elected the following officers for the first fiscal year:

President—John Sheldon.

Vice President—George Smith.

Secretary—Chas. Waterbury.

Treasurer—W. S. Mills.

Directors—Daniel Wixson, Mathew French, Charles Decker, Joseph Kinney and Calvin Fenton.

On motion, adjourned.

A meeting of the Executive Board was appointed on the second day of July.

The Executive Board met at the office of J. Divine, in the village of Lexington, on Saturday, the second day of July, President Sheldon in the chair.

On motion, it was

Resolved, That the Treasurer give bonds to the Society, to be approved by the President and Secretary, in the sum of one thousand dollars.

On motion of D. Wixson,

Resolved, That a Fair be held in the village of Lexington, in the month of September next.

The following rules and regulations, and a list of premiums to be awarded, were then adopted:

RULES AND REGULATIONS for the first Annual Fair of the Sanilac County Agricultural Society, to be held in the village of Lexington, on Tuesday and Wednesday, the 27th and 28th days of September, 1859.

TICKETS.

Each member of the Society will be furnished with a ticket, which will admit himself and wife, and all members of his family not over eighteen years of age, to the Fair ground, both days of the Fair.

Single tickets for those who are not members, will be for sale at the gate of the Fair ground. Price 10 cents.

Free tickets will be furnished by the Secretary, to men, necessary in his opinion, to take care of the stock.

All exhibitors must be members.

Rules and Regulations in regard to Animals and Articles exhibited, and awarding of Premiums:

1. All articles exhibited for premiums must be ready for examination on the first day of the Fair, and must be entered on the Secretary's book before entering the enclosure, each in its appropriate class, and have a card attached.

2. All stallions entered for premiums must have been owned, and kept for service, by persons residing within the county during the last season.

3. Draught horses, except stallions, may be tested by the committee, to actual draught in harness, and stallions may be so tested or not, at the option of the exhibitors.

4. All horses entered as matched pairs, must have been owned and kept together as a span, at least three months, before the Fair.

5. All horses will be required to remain on the ground four hours each day, under the direction of the Marshal.

6. Oxen exhibited as working cattle, must be hitched to a cart or wagon, and may be tested in draught and backing, with a load.

7. All neat cattle must be led out for examination, when requested by the Marshal, and there remain until the judges have decided upon their merits, when the winners of prizes will be designated by badges.

8. Foreign machinery and farm implements, which shall be presented for exhibition, and adjudged worthy, shall be entitled to a discretionary premium of a diploma or books.

9. As soon as the viewing committees have fully determined on the premium articles, the same shall be designated by marking upon the cards attached to the articles.

10. No article, nor animal, entered for exhibition, may be taken away before the close of the Fair, except by permission of the Marshal; and if removed in violation of this rule, will forfeit the right to a premium.

11. No person whatever will be allowed to interfere with the judges during their adjudications, and no judge may adjudicate on his own stock or articles.

12. No premium will be awarded, where the animal or article is deemed unworthy, though there be no competition.

13. The judges may award discretionary premiums, of diplomas and books, in addition to those mentioned in the list, and cash premiums on articles, though there be no competition.

14. No article, nor animal, can take more than one premium, except as above provided.

15. All articles of domestic manufacture must have been manufactured in the county within the year, and together with all fruits and flowers, must be the production of the exhibitor, to entitle him or her to a premium.

16. Those competing for a premium on field crops, must furnish satisfactory evidence, by affidavit, of the amount of grain actually grown upon one acre of land.

17. Animals and articles of all kinds, having received a first premium at a previous fair, cannot again compete for

a first premium in the same class, but may be awarded a diploma or books.

18. Judges are requested to make their reports to the Secretary, at his office, near the entrance to the Fair ground, before eleven o'clock A. M., of the second day of the Fair.

19. The premiums will be delivered to the persons entitled thereto, within one week after the Fair, and all cash premiums not called for within sixty days thereafter, will be considered as donated to the Society.

It was then moved and carried, that the Secretary furnish a copy of the proceedings of this meeting, and also of the premium list, to each of the papers in this county, and request its publication.

On motion, adjourned to Saturday, the 23d day of July.

—

Executive Board met pursuant to adjournment, on Saturday, July 23d, at the office of J. Divine, President Sheldon in the chair.

On motion,

Resolved, That the directors be and they are hereby appointed a committee to ascertain where suitable grounds for holding the Fair may be most advantageously obtained, and report at next meeting of the board.

Adjourned for one week.

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On Saturday, July 30th, board met pursuant to adjournment.

The committee appointed at the last meeting reported in favor of the grounds of J. L. Woods, directly east of the Free-will Baptist Church.

Report of the committee was accepted and they were empowered to negotiate for said grounds for the purpose of holding thereon the first annual Fair.

Adjourned to Saturday, the 3d day of September next.

Executive Board met pursuant to adjournment, Saturday, September 3d.

On motion, it was

Resolved, That Isaac Lenty be appointed an agent to solicit membership to the Society.

On motion,

Resolved, That the premium list be extended so as to embrace samples of all kinds of grain.

Also,

Resolved, That there be a meeting on Tuesday, the 20th inst., at 8 o'clock in the morning, to prepare the grounds, construct a track, and erect suitable buildings to protect the articles exhibited and to build pens for sheep and swine, and that a general invitation be given to all members of the Society, and all others favorable, to attend and assist in making the necessary arrangements.

And further

Resolved, That there be a meeting at one o'clock of the same day to appoint the judges of articles and stock exhibited at the Fair.

On motion,

Resolved, That the Secretary be instructed to invite Hon. A. D. Conger, to deliver an address before the Society the last day of the Fair.

Adjourned.

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The Society met at the office of John Divine, Esq., at one o'clock, on the 21st day of September, for the election of judges; President in the Chair.

In the absence of the Secretary, W. S. Mills, was appointed Secretary *pro tem.*

The following persons were then elected judges for the respective classes named.

Division A., Class 1, Durham cattle; Class 2, Devons—George Smith, John Elliot, and James Purkiss.

Class 3, Native and Crosses; Class 4, Work Oxen and

Fat Cattle—Robert J. Arnot, Charles Decker and William Merrin.

Division B, Class 1, Horses—Mathew W. Stevenson, John L. Woods, and Henry Knapp.

Class 2, Single Horses, Mares and Colts—A. Jones, Joseph Kinney, and Calvin Fenton.

Division C, Class 1, Merinos; Class 2, Saxons; Class 3, Long Wooled Sheep—L. J. Whitcomb, Geo. Smith, and Chas. Decker.

Class 4, Swine—A. D. Howe, Amos Hykes, and James Purkiss.

Class 5, Poultry—Norton Hollister, Henry Wakley, and John Lutwyche.

Division D, Class 1, Farm Implements—Daniel Wixson, Mathew French, and George Smith.

Class 2, Manufactures—R. D. Shenick, A. Hykes, and Wm. Crippen.

Class 3, Domestic Manufactures and Products of the Dairy—Clark Haywood, Mrs. Norton Holister, and Mrs. Isaac Lenty.

Class 4, Needle Work and Fancy Articles—Wm. R. Nims, Mrs. J. Lutwyche, and Mrs. J. Divine.

Division E, Class 1, Grain, Best Acre—Daniel Decker, Luther D. Miles, and Calvin P. Hadley.

Class 2, Fruits and Vegetables—Clark Hadley, Israel Huckins and J. C. Waterbury.

Class 3, Miscellaneous Articles—Watson Hubbard, R. A. Shell and H. H. Nims.

Class 4, samples of Grain, not less than one bushel—Randal E. Davis, Jeremiah Jenks and Isaac Lenty.

Plowing Match—Israel Huckins, Isaac Lenty and Geo. Smith.

—

The First Annual Fair of the Society was held on the 27th and 28th days of September, 1853.

Although the weather the first day of the Fair was

rainy and very unpropitious, still there was a large attendance. The second day being more favorable, there was the largest assemblage of our citizens ever witnessed, and although our county is comparatively new and sparsely settled, still the show was excellent, and in many of the departments would compare favorably with older settled portions of the State. The Fair proved a complete success, and exceeded the anticipations of the most sanguine, and has given an impetus to all branches of industry that will *tell* in the future. The Address, delivered by Hon. W. S. Mills, was listened to by a large crowd, with marked attention and interest, and was delivered in his impressive and happy style.

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Premiums awarded at the First Annual Fair of the Sauk County Agricultural Society.

Cattle.

Best Durham bull, Stephen Vincent,.....	$2 50
do. Devon heifer, two years old, John Quin,.....	1 50
do. native bull, Charles Decker,.....	1 50
2d best do. Henry Wahley,.....	Dip.
Best yearling bull, S. P. Davis,.....	1 00
do. spring calf, Norton Holister,.....	1 00
2d best do. Charles Decker, ...	Dip.
Best milch cow, John L. Bell,.....	1 50
2d best do. C. Decker,.....	1 00
Best cow and calf, James Davis,.....	Dip
do. yearling heifer, S. P. Davis,.....	50
do. two year old heifer, R. J. Arnot,.....	1 00
2d best do. do. George Carpenter,.....	50
Best working oxen, Daniel Wixson,.....	2 00
2d best do. W. D. Osgood,.....	1 50
Best fat cow, Howe & Farr,.....	1 00
do. yoke two year old steers, E. Pierce,.....	1 50

Horses.

Best blood stallion, J. Jenks,..... $2 50
do. do. three years old, D. Decker,..... 2 00
do. stallion for all work, C. H. Gordon,..... 2 00
do. do. do. three years old, J. Sheldon,. 2 00
do. stallion, two years old, J. B. Armstrong,..... 2 00
do. yearling stallion, John Divine,..... 1 50
do. carriage horses, J. L. Woods,..... 1 50
2d best do. Amos Hykes,..... 1 00
Best draught horses, Charles Decker,..... 2 50
2d " " Mark Carrington,..... 1 50
Best matched carriage horses, G. W. Jones,..... 2 50
2d " " " Henry Wideman,.... 1 50
Best pair matched draught horses, W. Macklem,. 1 50
" brood mare, George Smith,..... 2 50
2d " " Mathew French,..... 1 50
Best single carriage horse, G. J. Parker,..... 1 50
2d " " " Watson Hubbard,..... 1 00
Best 2 year old colt, Andrew Macklem,..... 1 50
2d " " Mathew French,..... 1 00
Best yearling colt, J. C. Waterbury,..... 1 50
2d " " George Smith,..... 1 00
Best sucking colt, John L. Bell,..... 1 00
2d " " Stephen Vincent,..... 50

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Sheep.

Best Merino buck, Howe & Farr,..... 2 00
" Saxon " Moses Beaty,..... 2 00
Six long wooled sheep, 2d premium, Wm. Merrin, 1 50
Best 5 ewes, long wooled, R. J. Arnot,..... 2 00
" buck, " George Nicely, ... 2 00
Four ewes, " " " ..... dip.
Five ewes and buck, long wooled, worthy of notice,
John H. Swarts,..... Dip.

Swine.

Best hog over 1 year old,	Howe & Farr,	1 50
" boar under 1 "	Elijah Caster,	1 00
2d " " "	Lawson Bisbee,	50
Best sow, Lawson Bisbee,		1 00
2d "	James Beaten,	50

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Poultry.

Best lot common fowls,	James Purkiss,	50
" chickens,	George Nicely,	Dip.
" geese,	George Nicely,	50
" turkeys,	Chas. Decker,	50

One case of Chittagongs, reported by judges, card gone, worthy of notice, prove to be property of C. Decker.

—

Farm Implements.

Cultivator, 2d premium,	Moses Beatys,	1 00
" (foreign,)	Paul Bedford,	Dip.
Best plow,	William Crippin,	1 50
2d " " "		1 00
Horse rake, (foreign,)	George Smith,	Dip.
Best fanning mill,	Silas Davis,	1 50
2d " "	Warren Rulison,	1 00

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Manufactures.

Best flag-bottomed chairs,	John Fitzgerald,	1 00
" common " " "		Dip.
" 2 pair boots,	John McIlreevy,	1 00
" book case,	R. D. Shenick,	1 00
" dining table, "		50
" wash stand,	Eri Brown,	50
2d " "	R. D. Shenick,	25
Best window sash,	C. Decker,	50
2d " "	G. W. Baldwin,	25

Best extension table, Eri Brown,	1 00
" brick, Charles Decker,	Dip.
Sewing machine, (foreign,) Hiram Bacon,	Dip.
Bureau, 2d prem., John DeGeer,	50
Hall stand,	Diploma.
Axe helves,	Diploma.
Five buck skins, 3 calf skins, 1 wolf skin and 1 bear skin, (tanned,) worthy of notice, no competition, W. Randell,	Diploma.

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Domestic Manufactures, Products of the Dairy, &c.

Eight samples of butter, very nice,	
One cheese, too small to be entitled to premium,	
Best butter (roll,) Mrs. N. Holister,	$1 00
2d best " (packed,) Mrs. Geo. Smith,	50
Best piece patch-work, Mrs. E. Pierce,	50
" pair stockings, Mrs. John Wixson, Jr.,	25
" pr. socks, Mrs. A. M. Clark,	25
" coverlet, Mrs. A. Benaway,	50
A very fine specimen of honey, no competition, Warren Rulison,	Dip.

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Fancy Articles and Needle Work.

Best winter bonnet, Miss M. Vasey,	$0 50
" summer " Mrs. A. D. Howe,	50
" tidy, Mrs. Kellog,	50
2d best tidy and lamp mat, Miss Fanny Huckins,	50
Best collection of flowers, Miss Mary Giles,	Dip.
2d best do., Miss A. O. Mills,	Dip.
Geranium, (very pretty,) Mrs. I Huckins,	Dip.
Fly-brush, (very fine,) Mrs. L. J. Whitcomb,	Dip.
Painting, (fine specimen,) no competition, Miss E. A. Whitcomb,	Dip.
Ottoman covers, (good sample,) Mrs. A. D. Howe,	Dip.

Artificial fruit, (fine specimen,) Mrs. A. D. Howe,..
Pin cushion, (good work,) Miss Vasey,.....
Case of riding hats, not entered in time, (very good specimens, Mrs. A. D. Howe,.....

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Grain per Acre.

Best fall wheat, (26 bushels per acre) Daniel Wixson, $3 00
" spring wheat, (24½ bushels per acre) George Nicely, ... 3 00
Best Oats, (161 bushels of 40 lbs. each per acre) Henry Knapp,..... 1 00

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Fruit and Vegetables.

Best variety peaches, Mrs. W. R. Stafford,..... $0 50
2d best do. Mrs. J. L. Woods,..... 25
Several other specimens on exhibition very nice.
Best variety of apples, J. J. Hosley,..... 50
" pears, Mrs. J. L. Woods,..... 50
Best sample grapes, A. G. Wild,..... 50
2d best do, Mrs. C. H. Moore,..... 25
Best sample beans, Mrs. E. Degeer,..... 25
2d best do., James Mattison,..... Dip.
Best turnips, Luther D. Mills,..... 25
2d best do., M. Carrington,..... Dip.
Best onions, Howe & Farr,..... 25
2d best do., Daniel Decker,..... Dip.
Best sample potatoes, Daniel Wixson,..... 25
2d best do. J. J. Hosley,..... Dip.
Best pumpkins, six, James Beaten,..... 25
2d best do. four, Amos Hykes,..... Dip.
Best squash, George Holmes,..... Dip.
do. three squashes, A. G. Wild,..... Dip.
do. variety beets, Isaac Lenty,..... 50
2d best do. Amos Hykes,..... 25

Best peppers, Mrs. A. W. Hand,	$0 50
2d best do. E. Degeer,	25
Best tomatoes, Mrs. G. W. Baldwin,	25
2d best do. Mrs. A. W. Hand,	Dip.

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Miscellaneous.

Fine specimen of drawing, (house plan,) Charles Decker,	Dip.
Half M shingles, (sawed,) G. W. Jones,	Dip.
Ornamental painting, John Fitzgerald,	50
Fine specimen graining, do.	Dip.
Jelly cake and bread, (excellent quality,) John L. Tead,	Dip.
Carved vessel, (fine,) Mrs. A. D. Howe,	Dip.
Book-rack, leather work,	Dip.

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Samples of Grain—one bushel.

Best winter wheat, Andrew Macklem,	$1 50
2d best do. Geo. Smith,	1 00
Best spring wheat, Charles Decker,	1 50
2d best do. Norton Hollister,	1 00
Best barley, (six rowed) Charles Decker,	1 00
do. beans, John Wilson,	1 00
Sample of buckwheat, very fine, James Mattison,	Dip.
Best peas, Robert A. Shell,	1 00
2d best do., do.,	50
Best oats, Henry Knapp,	1 00
do. potatoes, Robert A. Shell,	1 00
2d best do. Luther D. Mills,	50
Best sweet corn, A. G. Wild,	1 00
do. eight rowed corn, L. D. Mills,	1 00

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The first morning of the Fair was rainy, and it was determined to hold open for entries as late as possible, and

entries were made up to eleven o'clock of the second day, leaving but little time for viewing committees to examine stock and articles before making their reports to the Secretary, who was expected to make his report before the general exhibition of horse-flesh and speed, which was set down for three and a half o'clock P. M.

The committee of arrangements supposed they had prepared room sufficient to exhibit all articles which would be presented, but the entries exceeded their anticipations and they learned, too late to remedy the defects, that their arrangements were altogether on too small a scale, a difficulty that will be avoided in future.

A number of articles on exhibition and worthy of favorable notice, some of which would have been entitled to a premium, were entirely overlooked by the judges.

The exhibition of female equestrienism, which took place the second day, added much to the interest of the occasion, and the prolonged cheering showed that the crowd fully appreciated the performance. We hope that at our next Annual Fair, premiums will be offered and awarded for the best equestrienism by the ladies.

Perfect order and decorum prevailed during the holding of the Fair, and each apparently tried to make things agreeable to all. The officers who had charge of the grounds, are entitled to much credit for their constant vigilance and untiring exertions in keeping everything in place, and for their gentlemanly deportment towards all.

We trust that another year we shall be better prepared for the Fair, and that the arrangements will be more full and complete. All that is now required to have a permanent and growing Agricultural Society in our county, is a little more interest manifested by those who are to be benefitted by such an organization. We have some good stock, and more will be brought in. Our soil can be made to produce as great a variety, and as large crops as that of any other county in the State. We have at hand the

material to manufacture most of the articles and implements of husbandry, and the mechanics to perform the necessary labor. The same may be said in regard to furniture and domestic manufactures, and the sooner our hidden resources are brought to light, the better will it be for our county and for all our citizens.

An interest in these matters has now been awakened, which we trust will not abate one jot until we rank where we should as an agricultural and manufacturing community. We believe that the effect of our first Annual Fair will be discernible in the improvements amongst and around us for years to come.

The following are the officers elected on the last day of the Fair, for the ensuing year:

President—John Sheldon.

Vice President—Isaac Lenty.

Secretary—Charles Waterbury.

Treasurer—Norton Hollister.

Directors—Charles Decker, Robert J. Arnot, John Kelly, George Smith, Daniel Wixson.

On motion of L. J. Whitcomb,

Isaac Lenty was appointed as special agent of the Society, to attend the State Fair, at Detroit, and exhibit some of the products of our county.

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ANNUAL MEETING OF THE EXECUTIVE BOARD.

The Executive Board of the Sanilac County Agricultural Society, met at the office of John Divine, on Tuesday, the 11th day of October, 1859.

President Sheldon in the chair.

On motion of W. S. Mills,

Joseph Kinney was appointed committee to return the lumber borrowed of E. Pierce for the use of the Society, ascertain the damage done to the same, and report to the

Secretary, who was instructed to draw an order on the Treasurer for the amount.

It was moved and carried that the Secretary procure suitable blanks for orders, in a book form, so as to leave a duplicate of each and every order in the book, after the order is issued, and that the Secretary be instructed to draw orders for all sums already paid out by the Society, and deposit the same with the treasurer as vouchers, and that the Secretary keep a correct account of the same.

The Treasurer's report was then read and approved.

REPORT OF THE TREASURER.

Sanilac County Agricultural Society, in account with W. S. Mills, Treasurer.

RECEIPTS.

Fees for memberships, received in cash,.....	$107 00
Received of Chas. Waterbury, being the product of the 10 cent. admission tickets, at the gate of the Fair grounds, on the 27th and 28th days of September,.....	48 09
Received of Geo. Carpenter, for rent of stand on Fair grounds,.....	1 00
Received of John Fead, for rent of stand on Fair ground,.....	1 00
Total cash receipts,.....	$157 09

Fees for memberships, were received in property, as follows:

From J. L. Woods, blank book for Sec'y,..	$1 00	
" H. H. Nims, " " Treas'r, and entering articles, &c., exhibited at the Fair,.....	1 00	
From Charles Decker, lumber for ten memberships,.....	10 00	
From G. W. Jenks, nails, one membership,	1 00	
" Hiram Bacon, teaming, " "	1 00	
" E. Pierce, lumber, " "	1 00	

From M. W. Stevenson, lumber, membership,	$1 00	
" R. E. Davis, " "	1 00	
		17 00
Total receipts,		$174 09

DISBURSEMENTS.

All'd and p'd J. L. Woods, for blank book,	$1 00	
" H. H. Nims, for 2 "	1 00	
" Chas. Decker, lumber,	10 00	
" E. Pierce, "	1 00	
" M. W. Stevenson, "	1 00	
" R. E. Davis, "	1 00	
" Geo. W. Jenks, nails,	1 00	
" Hiram Bacon, teaming,	1 00	
Cash paid J. L. Woods & Co., for nails,	1 50	
" Chas. Decker, on lumber,	4 00	
" Jeffersonian office for printing cards and premium pamphlets,	10 50	
		33 00
Cash on hand, and this day paid over to Norton Hollister, treasurer elect,		141 09
		$174 09

W. S. MILLS, *Treasurer.*

Lexington, Oct. 11, 4859.

Of the officers elected for the ensuing year, the following were present and signified their acceptance:

John Sheldon, President; Charles Waterbury, Secretary; Norton Hollister, Treasurer; Charles Decker, R. J. Arnot, George Smith, and Daniel Wixson, Directors. The Treasurer's bond with two sureties was then filed with the Secretary, as required by the rules and regulations of the Society.

On motion, it was

Resolved, That the plowing match be held on the 3d day of November, and that Charles Decker, John Sheldon, and R. J. Arnot, be, and they are hereby appointed a commit-

tee to select and stake out the ground, make the necessary preliminary arrangements, to give the necessary notice, and to have the general charge and oversight at the time the same is held.

On motion, George F. Kilets, was appointed assistant Secretary.

On motion of Charles Decker, the President and Secretary were appointed a committee to make arrangements for obtaining suitable grounds for the use of the Society and report at the next meeting of the Executive Board.

On motion, adjourned to Thursday, November 3d, at 9 o'clock, A. M., to meet on the grounds selected for the plowing match.

From the financial exhibit it will be seen that before the premiums were paid there was a surplus in the Treasury of sufficient amount to meet all these, and still have on hand a small amount. But most of the persons who were awarded premiums generally donated the amount awarded them, feeling a warm interest in the Society and not wishing to risk crippling the Society by drawing all or nearly all the funds from the Treasury. And the result is that our Society now stands upon a firm footing, with the means on hand to commence operations another season. In addition to this, the Board of Supervisors, seeing and feeling the need of a greater interest in the cause of Agriculture, at their annual session, the second week in October, resolved to assess one-tenth of a mill on the dollar, on all the taxable property in the county, for the aid of the Society.

CHARLES WATERBURY,
Secretary.

ADDRESS

Delivered before the Sanilac County Agricultural Society at its First Annual Fair, September 28, 1859, by Hon. W. S. Mills.

LADIES AND GENTLEMEN:

Only three days have elapsed since we learned that the gifted orator, advertised for this occasion, could not respond to the invitation extended to him some weeks since to address us to-day. Previous to obtaining this information I had entered into engagements that have necessarily occupied most of my time during these three days. The haste in which the remarks I shall submit to your consideration have been prepared, therefore, must be my apology for their imperfect character. With more time for their consideration, I should have hoped to offer something better worthy your attention.

My suggestions are offered as the thoughts of a looker-on, rather than an actual worker in the field of agriculture. You may, perhaps, have glanced over a board, where two expert checker or chess players were engaged, and though each of them were better players than yourself, you could now and then detect their wrong moves, and perceive where strength and ultimate success might have been secured for a game that was lost in hands far more competent than yours. It is in the character of an observer that I address you to-day and not as a practical farmer. With less ability to carry on a farm than most of you, yet, like the looker-on upon a checker board, I undertake to suggest improvements that may be made upon the farm, though that farm be in the hands of men far wiser than myself in the science of agriculture. I hope you will receive my propositions in the spirit they are offered, adopt or act upon them as far, and no farther, than your better judgment shall indicate their reasonableness and truth.

We are all alike interested in the success of Agriculture,

and its kindred industrial pursuits. It is these that produce our material wealth; it is these that clothe, feed, and house ourselves and families, and bring the comforts that surround our homes. The progress of mind even is dependent upon the physical aids thus produced, as much as the success of labor depends upon the intelligence with which it is applied. Every improvement in agriculture or the mechanic arts is a common blessing. Truly it has been said, that he who causes two spears of grass to grow where before there was only one, is to that extent a benefactor of mankind.

My highest hopes of mankind are centered in the triumphant advancement of the physical sciences. It is in their progress that I look for the means to overcome the greatest evils that drag the world downward. Science and skill in applying the forces of nature to the wants of man, must in time relieve the overtasked and gratify the universal desires with all that can be made available for man's convenience, refinement, camfort and advancement.

Agricultural Societies like the one you have organized and are now inaugurating into practical life, can be made the means of great improvement in every branch of agriculture. They have been of vast utility in Europe and are rapidly becoming important institutions of this country. They spread knowledge of the best methods of cultivation; diffuse the best varieties of grain and fruits, and the best kinds of stock. They call attention to the general rule of the vegetable kingdom that like produces like, and thus cause the farmer to save the best of everything for seed, and in our short seasons the earliest matured. The knowledge of one is made the common property of all, and each farmer is made to stand upon the vantage ground gained by his neighbor, and by his predecessor. They create a generous rivalry, inciting an ambition nobler than ever fired the breast of the leader of armies. Contributing to and carrying on these agricultural societies

is no mean occupation. One of the handsomest achievements of Franklin, who accomplished so much to adorn the American name, was the writing of the word "plaster" upon a meadow, with a powder of that article. In a few weeks the name could be read in the luxuriant grass, as far as the field was visible; and the Pennsylvania farmers were convinced of its importance. The mind that conceived and the hand that drafted the American declaration of rights, rendering immortal the name of Jefferson, invented and constructed a plow upon correct mathematical principles which he sent to an agricultural fair in France, and received the second premium upon, while he was President of the United States, enjoying the highest measure of political fame.

These Agricultural Associations are instruments that cause the introduction of the best horses. The stock once procured it costs a farmer but a few dollars more to rear a horse worth $150, than is now expended by so many in raising horses worth only $75 to $100. The profit growing a poor horse is nothing. He has eat his head off by the time he is ready for market; while a good one brings from fifty to seventy-five dollars above cost. Why continue to raise the comparatively worthless animals?

A small outlay will prove the best breeds of cattle; and there is more profit in one good cow or one good ox, than two or three poor ones. This is an every-day saying among you, yet so much disregarded in practice as to need repeating. A farmer might grow rich fattening hogs of the Berkshire, Bedford, or Irish Grazier varieties, when poverty would drive him from his farm, raising the "racer hog" and "land pike," that so much infest our county. To procure one of the best breeds of every kind of domestic animal should be one of the first considerations of every farmer.

The inventive genius of the American mechanic is each day producing some improved implement for the purposes

of agriculture. Fairs are the means of bringing these articles together, into competition with each other, and with the old methods. They give the farmer a good opportunity to select the best of each for his individual purposes, without compelling him to buy an experiment with all. He learns by practical demonstrations how much manual toil may be saved, and how much more effectually his labor can be applied with improved threshing machines, reapers, mowers, rakes, plows, cultivators, and other implements. Each improvement in any of these is brought to his notice, and he is enabled to take advantage of it.

The great sum of human enjoyment and human woe are made up of the trifles of every day life. A lifetime furnishes but few occasions for great deeds, and those may be of only momentary existence; while the great sum of life is constituted of its every day and every hour circumstances and transactions. It is from these the balance of human joy or human woe is to be extracted.

One of the first considerations of every farmer should be a beautiful house—an attractive home. I do not mean an expensive structure—far from it—rather the reverse; but a neat, tasteful residence, the plan of which not only embraces health, comfort and convenience, but just regard to the laws of beauty. Not such unsightly piles as frequently meet the eye. It costs nothing to pay some attention to the laws of architecture in the construction of a farmers' dwelling, and adds much to the appearance. Why disregard the law that nature's mode of expressing strength and the more exciting qualities, is by angularity, while her general mode of expressing delicacy and the soothing qualities, is by curvature. Equal spaced repetition is confessedly beautiful, yet how often disregarded, even in the location of the windows of a house. The application of some of the simplest principles of architecture, would add greatly to the appearance of nearly all our farm houses.

But it is not so much in the building itself, as in the grounds, and absence of trees, shrubs and flowers about it, that the western farmer fails. It is painful to pass through the country and look upon so many hard, bare walls, grating harshly upon the eye, in a place where but yesterday stood so many, so beautiful and varied varieties of the noblest trees of the primeval forest. All—all cut down with a ruthless hand, and none planted in their place. Because the forest is necessarily removed to make a field for cultivation; every tree is cut where comfort and an eye to beauty would dictate they should be spared. Let shade trees grow about your premises—if the noble specimens of the forest have already met the common fate, plant others in their stead. The maple, pine, oak, elm, basswood, ash, locust, and other beautiful trees, are with us easy to obtain. In proper situation and numbers, they are both ornamental and profitable. They have, too, a social and moral influence, far beyond the mere gratification of the eye, or the consideration of dollars and cents. It has been well said, by a writer: "In their freshness and simplicity they impress the young mind with sentiments of purity and loveliness, as enduring as life. From the cradle of infancy, consciousness first dawns upon the beauty of nature beneath their grateful shade; the more boisterous sports of childhood seek their keenest enjoyments amid their expanding foliage, and they become the favorite trysting place when the feelings assume a graver hue, and the sentiments of approaching manhood usurp the place of unthinking frolic. Their memory in after life greets the lonely wanderer amid his trials and vicissitudes, inciting him to breast adversity, till again welcomed to their smiling presence." Their thousand associations repress the unhallowed influence of vice; and when the last sun of decrepid age is sinking to rest, these venerable monitors solace the expiring soul with the assurance that a re-

turning spring shall renew its existence beyond the winter of the tomb.

You build roads, plank roads, railroads, and make other improvements to raise the value of your lands. This is well. But another method, quite as certain, would be to adorn and beautify the farm house and grounds about it. How much more valuable in the eye of a purchaser, is a home thus attractive in its appearance than an unsightly habitation.

Consult taste in the structure of your house, plant flowers, shrubs and trees, adorn and beautify your homes, and they will be so attractive your children will never seek the follies, vices and enervating influences of a town or city life, now so often destructive of the brilliant hopes entertained by parents of their favorite children. Bring them up to the noble calling of cultivators of the soil, where a field is open for the largest unfolding of man's physical and moral nature. Where the noblest ambition has ample scope and "verge enough," winning by taste and skill the teeming wealth from the prolific bosom of nature.

It is important that the farmer be well educated, and that he display taste in the outward appearance of his home, but it is none the less so that his wife have a liberal education, and display taste and skill in the management of its interior affairs. I do not hesitate to declare that a large proportion of the women who have charge of household affairs, are unacquainted with the simplest rules of good cooking—scientific cooking. I say scientific, for, properly understood, the preparation of food for man is one of the most important sciences. The health and vigor of a people depend in a great degree upon the character of the food they subsist upon. Their physical and mental developments depend upon their health. Hence, the importance of wholesome food. But how is a woman to set only wholesome and properly prepared food before

her household, if she understand not the chemical condition and changes of the articles used, and the physiology of the human system. It is to be regretted, and I may offend by repeating here, but it is none the less a stubborn fact, that one-half of all the bread—the great staff of life—now manufactured, is not only unpalatable, but unfit for human digestion; that one-half the butter is rancid, offensive and unwholesome. Yet I am told the manufacture of good bread is a simple process, when once understood; and that the great secret of making good butter consists in abstracting all the particles of milk, which, if left in it undergo a chemical change that destroys the whole, and renders it unfit for consumption. It is not enough that the proper preparation of a few articles of food is understood, for although only a few kinds should be taken into the stomach at the same time, the proper supply of the human system requires a great variety of nutriment, covering almost the entire range of the vegetable and animal kingdoms, to keep all parts of its mechanism in order. Let the preparation of food be taught your daughters as a science, and carefully impressed with an abundance of practical illustrations, and you will add largely to the health, comfort and pleasure of life.

In neatness, taste and beauty, the interior of American homes usually far outstrip the outward appearance, and entitle the matrons to the highest praise; still there is room for improvement.

It is not alone from these considerations that the education of the wives and daughters of farmers should cover a wide field of knowledge. We are by nature social beings. We must have somebody to talk with, project and hope with, sympathize and commune with. If the wife and daughters, by deficiency of knowledge, are incapable of these, the farmer will seek to supply the want, at a public resort—a bar-room, perhaps—and become an idler, and a spendthrift, if not vicious and profligate. That sa-

cred enclosure—the family circle—must contain intelligence, or all else will fail to render it attractive to a cultivated mind. It is the females, too, who most impress their character upon the growing generation. The fountain must be ample or the stream becomes small and turbid.

Having secured an attractive home, the farmer should next turn his attention to barns and sheds, to make safe his crops and protect his stock. Every animal, to be made the most profitable, must be well fed and well housed from the storms of winter. You must not only have good varieties, but they must be well cared for.

In all the arrangements of the farm let a systematic plan be acted upon—one well considered, before adopted. In the simple matter of having a barn-yard drained into the centre, thousands of dollars may be saved. Have your fields properly divided. Let one crop follow another, and apply fertilizers in such manner as to preserve and increase the richness of the soil. Devote most land to those grains and vegetables to which the climate and your soil is best adapted; yet neglect not the others. Cultivate some of each. In the most favored lands there will be an occasional failure of some particular grain. If the whole farm is occupied with wheat, for instance, and it chance to fail, it brings embarrassment and difficulty. If a variety of grains and vegetables are sown and planted, a portion of them are sure to succeed.

Above all things cultivate every field that you plant or sow, well. Half cultivated land is miserable farming and short-sighted policy. Plow deep and often. On shallow plowed land roots of the plant are unable to penetrate deeply; they spread upon the surface. The rain-water runs off quickly and the surface becomes dry and parched when there is a dry season and the plant is stunted and withered. If there are long and heavy rains the water fails to penetrate below the plowed soil, and stands upon, covers up, and injures the roots of the plant. The same field

with deep and thorough plowing would produce well in a wet season because the water would pass below the plant roots and stand immediately upon the unmoved soil; and it would also yield well in a dry season because the little rain that falls instead of passing off in currents would dampen the ground as deep as it had been moved—the sun would not evaporate it as rapidly as when it stood close to the surface, and was thus more accessible to its rays; the roots of the plant would penetrate deeper and discover each reservoir of moisture. Loosened earth also gathers dampness from the atmosphere, when there are no rains, while the closely packed unplowed ground fails to obtain any. This is accomplished thus: there is more or less vapor in the air. All the little spaces in loosened earth become filled with heated air during the day. As the sun passes down, the earth grows chill, and the vapor in the little spaces in the loosened soil condenses into water, supplying food to the plant roots. Deep and thorough plowing is, therefore, best in all seasons and under all circumstances. Intelligence becomes useless without its application by the diligent hand of the husbandman. Nature yields her rich treasures only where the persuasive hand of rural industry is faithfully applied.

We are fortunate in the political institutions of the State under which we live; and in this nation of well paid labor —of free institutions, and cheap lands, every young man of industry, economy and energy, can, if he will, have a farm of his own. It is a privilege not fully appreciated. There is nothing like having your own land to subdue and improve, your own home to beautify, your own ingleside by which to rest the wearied limbs. I would enjoin it upon all—let your first care be to secure a farm of your own—not a large one to overrun and exhaust by partial cultivation, but one of sufficient dimensions to occupy your own labor.

Much has been said in business circles deprecatory of the collection laws of Michigan, which secure some property to all—despite of creditors; and particularly that one which guarantees inviolate a homestead to every family. It is said they drive capital from the State that would otherwise come among us to make improvements, and the progress of the State is thus retarded. I do not sympathise with these complaints. If capital is only to be allured among us by a prospect of taking the last dollar from poverty, or the home from the husbandman, it were better, far better that it never come. More aggregate capital will be produced by leaving men to labor upon their own soil, than could be thus borrowed from abroad, and produced by the system of tenantry that would follow. While in the one case it would be distributed among the many, and in the other, aggregated in the few, and those few foreign hands. If these were the sacrifices required to make public improvements, better leave them untouched. I am no enemy of plank roads and railroads; expend liberally of your accumulating products to construct them, and it shall be returned an hundred fold in the increased value of your produce and lands, caused by the improved facilities of transportation. But no sacrifice of homes and the introduction of tenantry is required to make these improvements.

To understand the evils of tenantry, and hired labor, we have only to look at the condition of the agricultural laborer of the wealthy, proud and prosperous nation of Great Britain. The title of the soil is in a few individuals, who each own thousands, or tens of thousands of acres. They rent in large tracts, generally of one thousand acres or more, to farmers. The farmer that rents land, is necessarily a man of $30,000 to $40,000 capital, to begin with. He hires laborers by the year to perform the work. The agriculturists are therefore divided into three distinct classes—the owner, the tenant, and the laborer—the latter

of course constituting the great mass. Four hundred years of this state of things has reduced the wages of their labor three-fourths, until it is now barely sufficient to sustain life. The real farmer is placed in a position where it is next to impossible to rise above a condition which furnishes nothing but the coarsest covering for his body, and a bare subsistence from day to day, without education, refinement or advancement. This, too, when the nation is said to enjoy prosperity—when wealth is accumulating—when invention, improvement and progress are the characteristics of the age. But what advantage are all these if the condition of the body of the people is not improved?

American farmers should be careful how they follow any course tending, however remotely, to a similar state of things. It should be impressed, that every man is under a sacred obligation to himself, to his family, and to his country, to secure a home, and preserve it unencumbered.

"Thou spot of earth, where from my bosom
The first weak tones of nature rose,
Where first I cropp'd the stainless blossom
Of pleasure; yet unmixed with woes;
Where, with my new born powers delighted,
I tripp'd beneath a mother's hand—
In thee, the quenchless flame was lighted,
That sparkles for my native land."

Yes, preserve inviolate, the *Home*—it is the nursery of Patriotism, the preserver of gentleness and purity, the birth and fruition of Hope, the resort of peace, plenty, joy and Love.

Agriculture is the highest and noblest employment of man. It not only brings the comforts and joys of life, in raiment to protect from exposure, and food to overcome hunger, but it actually builds up and sustains the entire animal economy. But for the proper preparation by means of vegetable organization, of the elementary atoms that unite in the growth, preservation, and unceasing reconstruction of the animal form, neither animal nor human life could be sustained for a single day.

Three-fourths of the American people are engaged in

agriculture. They hold the first place of importance in the nation; and undeniably the Farmers of the United States, taken as a body, occupy a better position in point of intelligence and influence, than those of any other nation. Still they have much to learn—vast improvements to make—an unlimited field of progress open before them.

In our intercourse with men of the various avocations of life, we often find the mechanic and manufacturer perfectly at home in all the knowledge pertaining to his particular occupation, and comparatively uninformed upon all other subjects; the merchant well understanding his particular labor, but ignorant of everything beyond the yard-stick quality, and per cent.; the lawyer familiar with the principles of law that govern property, but knowing little of the principles of its production; the physician ready with every known power of the healing art, while he has passed over, unheeded, the most important knowledge beyond his profession; the preacher perfectly familiar with his college or closet creed, and perhaps profoundly ignorant of the real condition and wants of the people. Each has studied the particular subject to which he expects to devote his attention. Each has been following the Apostolic injunction: "Give thyself *wholly* to these things." But among a large proportion of the agriculturists, strangely enough, the reverse of all this is true; he understands every other science better than the science of agriculture; he knows more of almost everything else than of the occupation he follows. We often find the cultivators of the soil in this country with a wide fund of general information, and more logical reasoners than any other class. Upon all political questions, while other classes are often dazzled with temporary results, the farmer looks beyond and sees more clearly the ultimate effects; hence, it is the rural population that generally originate and secure the adoption of the permanent policy of the government. But while the farmer sees so clearly the ultimate effect of

political measures, it is not uncommon for him to remain totally ignorant of the ultimate consequences of the method he has adopted for cultivating his farm. He may be yearly impoverishing and bringing to certain ruin, the soil which a little knowledge upon the subject would enable him to fertilize and enrich—instead of destroy. He opens wide the treasury of knowledge on every side of him, but continues oblivious to the great laws of Nature that govern the production of the crops he labors to produce. I would not have him learn less of other things, but more of his own occupation. The farmer, by the nature of his employment, requires the most extensive and varied fund of knowledge, and the most thorough, accurate, and perfect scientific education of all the professions or employments of life. There is no profession, art, or occupation, that has need of so much scientific knowledge as the cultivator of the soil. I know this is contrary to a wide spread opinion; it is, however, unqualifiedly true. It may be true that anybody, however ignorant, can, with rich soil, obtain a subsistence; but continued successful farming requires intelligence.

A man, for instance, unacquainted with soils and their chemical relations, having plowed a hard, clayey field in the fall, for a following summer's crop, and found it greatly benefitted thereby, would proceed next season to plow in the same manner, a light, sandy field, not only to the loss of his labor, but to the positive serious injury of the coming crop. A little chemical information upon the subject, would teach him that a light soil must only be moved just before the seed is deposited. If moved before it loses a portion of its nutritious qualities. The time has gone by when the duty of the farmer consists in the mere depositing of the seed and the gathering of what may *chance* to grow. He should know with positive certainty, beforehand, what will grow in any given soil and climate. Chemistry gives him the composition of any given plant. Those

constituents must be present in the soil and atmosphere, in the proportions necessary, or it is useless to deposit his seed. Chemistry tells him if any of the constituent elements are absent, which ones, and how to supply them. This knowledge is as certain and as practical as that conveyed by the farmer to his son when he tells him that corn fed to hogs makes good pork.

He who raises crops, and *profits* by *absorbing* the fertility of the soil he cultivates, falls from the dignity of a *producer*, and becomes a *destructive*. Chemistry will teach him the nature of the soil, the atmosphere, and the compound of each grain. Knowing these, he infers the rotation of growth, and the specific kind of article necessary to apply to retain and increase the fertility of the soil. Ignorant of these, he expends the same toil, and yet enervates and destroys the beautiful earth placed in his keeping. He brings a curse upon posterity, down to the fourth generation, by the destruction of the sources of their food and clothing.

Meteorology has most important bearings upon the farmer's labors. A soil may contain all the atoms required to form a luxuriant vegetation; yet if the temperature of the earth or atmosphere be too low, the plant makes slow progress. The soil and the temperature may be perfect, and water absent, and the crop fail.

Atmospheric air, rain, dew, snow and frost, each exert a controling influence over the production of all cultivated plants. The imponderable agents of light, heat, electricity and magnetism, each have important bearings upon the relations of vegetable life and health; yet but imperfectly understood, but opening a wide field for thought, experiment and investigation. The lightnings have been taught to bear the messages of man—they may yet be impressed into the service of the farmer, for the rapid production of vegetation.

A knowledge of mechanics is as essential to the farmer

for the construction and working of his implements, as to the man engaged exclusively as a mechanic. The application of the principles of hydrostatics and hydraulics, are necessary to the good management of a farm: Stock raising requires a perfect knowledge of animal physiology. Vegetable physiology is still more important to the practical agriculturist. To work understandingly, he must know the functions of the root, as imbibing the food of the plant, of the stem with its organs of circulation; of the leaf, retaining and assimilating what is necessary to the structure of the whole; and of the fruit, discharging into the atmosphere the superfluous matter.

Physical geography, geology and mineralogy, with the philosophy of subsoil plowing, are essential in the consideration of the character of every soil. Every physical element of a plant must have had its existence in the soil or the atmosphere. It is upon a perfect understanding of this fact, with all its relations, that certain and continued success in farming is secured.

A glance at the field of science here indicated, together with the principles of morals and government necessary for every good citizen to understand, makes it apparent, we repeat, that the true farmer requires an education more extensive, accurate, and scientific, than any other profession or occupation of life. We have an Agricultural College established in this State; from it some have supposed all this knowledge is to radiate. The Agricultural College is well; but it is a mere drop in an ocean, of what is required. The great body of the common schools of Michigan should have prominent in their organization, an agricultural feature. A school without such a branch should be the exception, not the rule. The science of agriculture should be taught in the schools as uniformly as that of mathematics.

The blessings of the unequaled political institutions of this favored land which we enjoy—the admirable climate,

and the virgin soil, bursting with its teeming wealth, are not of themselves enough. The gifts of our forefathers and of nature are thrown away upon us, if we lack the energy, skill and ambition to apply them. Advancement requires action—constant, laborious action on the part of the people. Contentment has ever been lauded as a virtue. We have heard its praise said and sung from earliest remembrance, impressed by books and rural lessons, oft repeated. I may be outlawed by universal sentiment, but I nevertheless declare that "contentment" is not a virtue, but a sentiment to be pitied and despised! Contentment! what does it imply? Contented that man should remain in his present condition—to do as his fathers did before him—no advancement, no progress, no improvement. Why, sirs, you see an occasional sample of the effects of this sentiment carried out, in now and then a man who lives in a hut, hunts a little, makes a few thousand shingles, enough to buy sour pork and poor whisky, and is today in the same situation he was ten years since—indolent and unthinking. *Contented*, and oblivious to the advancement in science, art, agriculture, politics, religion, and general civilization that surrounds him. These samples demonstrate, also, that the richest gifts of government and Nature are inadequate in themselves to make an advancing, progressive people. It requires voluntary effort on the part of the people themselves. I repeat, then, that "contentment" with your present condition and position, is a sentiment unworthy of commendation. I conjure you, be contented with nothing, as it is; make constant efforts at improvement, but be cautious that you destroy no good till you have found a better. I know of no assignable limits to the advancement of science and art, and their application to human industry. I know no limit to the amount of production per acre. I know no limit to the improvement in fruit. I know no limit to the application of Nature's products to the comforts and desires of

man. I know no limit to the direction of the forces of Nature to the purposes of humanity. I know no limit to human advancement in intellect and moral excellence! Go on, then—foster the impatient throb, the longing of a heart that pants and reaches after distant good:

"Press on! for it is God like to unloose
The spirit, and forget yourself in thought;
Bending a pinion for the deeper sky,
And, in the very letters of your flesh,
Mating with the pure essences of Heaven."

ST. CLAIR COUNTY.

At an adjourned meeting of the St. Clair County Agricultural Society, held in the city of St. Clair, May 4th, 1859, pursuant to a resolution of said Society at their last meeting, the following officers were present:

W. Truesdail, President; W. M. St. Clair, Treasurer; and S. B. Brown, Jno. E. Kitton, S. S. Hart, James D. Brown, Executive Committe.

Meeting called to order by the President.

On motion of John E. Kitton, supported by W. M. St. Clair, Albert A. Carleton was appointed assistant Secretary of this Society.

The committee appointed to raise the premium list and report at this meeting, reported progress and asked leave to sit again—granted.

On motion of James D. Brown, supported by L. Peach, the first premium on calves was reduced one-half.

After suggestion of members on the revision of premiums &c., Society adjourned to meet to-morrow, the 5th day of May, at 10 o'clock, A. M.

May 5, 1859.

Society met pursuant to adjournment.

Present, W. Truesdail, President; W. T. Mitchell, Vice President; W. M. St. Clair, Treasurer; L. Beach, S. B.

Brown, John E. Kitton, and Silas S. Hart, Executive Committee.

Meeting called to order by the President.

The committee appointed Feb. 9, 1859, reported in favor of printing the Constitution and By-Laws with the premium list for 1859, which report was adopted.

On motion of Mr. Mitchell, the President was authorized and required to select a design and procure the printing of five hundred copies of Diplomas for the use of the Society.

On motion of Mr. Mitchell, the Chair appointed a committee of four on printing, to wit: Mr. Mitchell, W. M. St. Clair, Jno. E. Kitton, Edgar White; and said committee were authorized and instructed to procure the printing of seven hundred copies of the Constitution and By-Laws and Rules and Regulations and premium list for 1859.

On motion of Mr. Mitchell, the Secretary was directed to notify all members of the Executive Board, at least ten days before any meeting thereof.

On motion of Mr. Kitton, it was resolved that this meeting adjourn to meet again on Tuesday, the 7th day of June next, at the office of assistant Secretary, at the city of St. Clair, at 10 o'clock, A. M.

—

June 7, 1859.

Society met pursuant to adjournment.

Present, W. Truesdail, President; W. T. Mitchell, Vice President; W. M. St. Clair, Treasurer; S. S. Hart, Jno. E. Kitton, and Daniel Leach, Executive Committee.

Minutes of last meeting read, corrected and approved.

On motion, the Executive Committee proceeded to appoint Viewing Committees, and the following persons were appointed, for which see the premium list for 1859.

On motion, it was resolved that the Fair for this year be held on Wednesday, Thursday and Friday, succeeding

the week of the State Fair. The Treasurer's report read, accepted, ordered placed on file, and printed with the premium list.

Motion made and seconded, that the next county Fair be held at the city of St. Clair, the citizens of that place preparing the grounds and buildings free of expense, to the Society.

Mr. Mitchell moved to amend as follows: That the Fair be held at the place that will fix up the grounds and buildings free of expense to the Society, and contribute the most funds for the benefit of the Society, to be reported by the 15th of July, to the Secretary. Amendment lost, 1 aye, 6 nays as follows:

Ayes—W. T. Mitchell, 1.

Nays—W. Truesdail, W. M. St. Clair, S. S. Hart, Jno. E. Kitton, David Leach, E. White, 6.

The original motion was then put, and carried, 5 ayes, 2 nays, as follows:

Ayes—W. Truesdail, S. S. Hart, W. M. St. Clair, Jno. E. Kitton, Daniel Leach, 5.

Nays—W. T. Mitchell, E. White, 2.

On motion, it was

Resolved, That notice be given that at the time of holding the annual election, the place of holding the Fairs of this county permanently, will be proposed for discussion and determination.

On motion, the Society then adjourned *sine die*.

E. WHITE,
Secretary.

Statement of the Affairs of the Treasurer of the St. Clair Agricultural Society.

Amount of money received from all sources for 1856, ... $508 00

Am't of money paid for premiums, printing, &c.,	$445 41	
Balance carried to 1857,	62 59	
		$508 00

Am't received from all sources, with balance from 1857,		$508 84
Am't paid for prem's and other expenses,	$453 00	
Balance carried to 1858,	55 84	
		$508 84

Am't received from all sources, with balance from 1858,	$984 64
Am't paid for premiums and other expenses,	771 04
Balance remaining on hand in Co. orders,	$213 60

There is an appropriation of two hundred dollars made by the Board of Supervisors, in 1858, that can be used by the Society in 1859.

W. M. ST. CLAIR,
Treasurer.

Meeting of the Executive Committee of the Agricultural Society.

The Executive Committee of the Agricultural Society met at the office of the President, in St. Clair, on Tuesday, Nov. 28, 1859, by call of the President.

Present, W. Truesdail, President; W. T. Mitchell, Vice President; W. M. St. Clair, Treasurer; E. White, Secretary; S. S. Hart, S. B. Brown, and Daniel Leach, Executive Committee.

The premium list as printed, was revised, and the following errors, made by the printers, corrected and struck off, not having been awarded:

DIVISION A.—CLASS I.

J. D. Brown, 2d premium, on 2 year old bull, ... $2 00

DIVISION F.—CLASS III.

W. Truesdail, 2d best red celery,..... $0 50

DIVISION H.—CLASS I.

Mrs. G. W. Wilson, 2d best orn'l wax-work,..... 50
" T. E. Barron, best paper flowers,..... 1 00
do. 2d best, do. 50
do. best wax, ... 1 00
do. 2d do. 50
Mrs. G. W. Wilson, best ambrotype,..... 1 00
do. 2d best do. 50
do. best daguerreotypes,..... 1 00
do. 2d best do. 50
do. best table cover,..... 1 00
do. 2d best do. 50
Mrs. HB. . Steele, 2d best fancy chair-covers,..... 50
" G. Cox, 2d best hair work,..... 50

DIVISION F.—CLASS I.—*Fruit.*

H. A. Caswell, 2d best collection of apples,..... $1 00
do. 2d best specimen fall apples,..... 1 00

These were struck off because the Executive Committee were notified that the fruit was not raised by the exhibitor, as required by the regulations of the Society.

Also, the fifty cents awarded to C. Decker, of Sanilac county, for second premium on field peas, was changed to a Diploma.

Bills of Potter and Scarritt for printing pamphlets—amount $25; also, bill of J. J. Scarritt, $7 50; and H. S. Potter, $21 50; E. D. Kitton, $4 97, were presented and allowed.

Bill of W. Truesdail, amount $141 92, for printing, hay, flags, and other incidental expenses of the Society, defrayed by him, was presented and allowed.

Bill of H. Whiting, $12 72, for nails, &c., for constructing fence and buildings for Fair grounds, presented and withdrawn.

Moved by the President, seconded by S. B. Brown, that the members of the Executive Committe present, unite in making a joint note for $200, bearing interest at ten per cent., on one year's time, and that said note be loaned to the Society for the purpose of paying the indebtedness of the Society for the past year, the receipts not having been sufficient, and that the Society pledge to those persons signing said note the one hundred and fifty dollars appropriated by the Board of Supervisors of this county for the year 1859, as part security for the re-payment of said note, and for the balance the first receipts of the Society, to be appropriated by the Executive Committee. Carried, and the note was made and signed by those present.

Moved, that the Treasurer be authorized to negotiate said note at the best rate he can obtain, and the proceeds be applied towards payment of the indebtedness of the Society.

Moved, that the sum of $25 be paid to W. Truesdail, towards defraying expenses of the band. Carried.

Moved, that the President of the Society present to E. White an appropriate testimonial as a mark of esteem for his services as Secretary of the Society for the past three years.

Moved, that the Treasurer be requested to make a statement of the financial condition of the Society, to be presented to the committee at its next annual meeting. Carried.

Bill of F. H. Morse, $3 50, allowed.

Moved, that the papers in this county be requested to publish the proceedings of this meeting. Carried.

There being no further business, the meeting then adjourned.

E. WHITE,
Secretary.

ST. CLAIR COUNTY AGRICULTURAL FAIR.

The fourth Annual Fair of the St. Clair Agricultural Society was held at St. Clair on the 12th, 13th and 14th inst. The citizens of St. Clair had fitted up the ground in good shape, having fenced it with a tight board fence, erected suitable buildings upon it for offices, cattle stalls, a floral hall, vegetable stands, &c., &c., and prepared an excellent track upon which to exercise horses. All the arrangements of the grounds were excellent, and highly creditable to the enterprise and good taste of the citizens of St. Clair.

The entries were all made on the first day of the fair, and were large, amounting in all to 952, embracing a good variety of such articles as are usually exhibited at agricultural fairs.

The exhibition, as a whole, was one highly creditable to the county, and we should like to make more full notes of it than our space will permit; but as we shall probably publish the premium list next week, our readers will not care to have a synopsis of it this week. We can only speak of the general features of the Fair.

In the line of stock there was a good exhibition. Among the cattle we observed a fine herd of Devons, belonging to Capt. S. B. Brown, of St. Clair; also some fine graded stock. Mr. Brown is taking great pains with his stock, and has already attained an enviable reputation as a stock-grower, not only in this county but in the State. His Devon bull is a superior animal, and his stock, much of which was on the ground, is excellent.

Mr. Lucius Beach, of Port Huron, also exhibited his full-blooded Devon, the pedigree of which we published last week, together with several cows and heifers, part Devon. Mr. Beach and Mr. Brown seem to lead the county on Devons. We saw on the ground a calf five months old, that girthed five feet. He was a cross of the Durham and Devon, having the size of the Durham and the color

of the Devon. He was the finest calf of his age we ever remember to have seen. We did not ascertain the name of his owner.

In Durhams, J. D. Brown, Esq., of Cottrellville, made a fine show. His two-year old bull is a monster in size. Mr. B. also had several other animals of this breed on the ground, and his herd attracted much attention. Of the other cattle on the ground there were many fine graded animals and some good native stock, but we did not ascertain the names of the several owners.

In sheep there was a fair exhibition, embracing Southdown, Lesters, Merinos, and other stock, but not so full a display as we should have been glad to see. Our farmers have but just begun to turn their attention to sheep; but we apprehend a few years will work a revolution in this respect, and that the county will eventually rank high as a wool-growing county.

In horses, the exhibition was not as good, we are informed, as at some previous fairs. There were, however, some very good horses on the ground, among which we noticed a beautiful span of matched Black Hawk horses belonging to Eugene Smith, Esq., of St. Clair; a span of bay colts, a span of black colts, the owners' names unknown to us; a span of horses for all work, belonging to John Beard, Esq., and several good single carriage horses and stallions. We also saw several fine teams on the ground, that were not entered for premiums. There were many inferior horses and colts, that have no right on a respectable farm, to say nothing of the folly of entering them for a premium at an agricultural fair. On the whole, we think a little more attention to improving the stock of horses in this county, is most desirable, and would prove remunerative.

In vegetables the Fair was a perfect success. It was the unanimous opinion of all present, who examined the vegetable display at the State Fair, that it came far short of equalling the display at St. Clair. We heard one gen-

tleman say that the show of vegetables at the National Fair at Chicago was not equal to this.

The display of fruits, flowers, needle-work, butter, cheese, &c. &c., in the floral hall, was, on the whole, very good. We wish we could buy as good butter for table use as we saw at the Fair. It is only an aggravation to know that such excellent butter can be manufactured in the county, when we have to use on the table such abominable stuff as is generally brought into this market and sold for butter.

The great day of the Fair was Thursday. On this day, the Mayor of Sarnia, and Mayor and Common Council of Port Huron, together with the Fire Department of Port Huron, visited the grounds on the invitation of the President of the Society. They were met at the boat by Lieut. G. R. Wilson, Chief Marshal of the day, his Assistants, a Band of Music, and the St. Clair Firemen, by whom they were cordially received and escorted through the principal streets to the President's stand on the Fair grounds. The President, Hon. Wesley Truesdail, welcomed them in an appropriate speech, which was responded to by Mayor Johnson, of Sarnia, Mayor Avery of this city, and the Chief of the Fire Department.

In the afternoon of Thursday, the firemen of the two cities took their Engines to the river, and made a friendly test of their respective capacities.

Before they had fairly begun to work their engines, it began to rain, and the wind rising, it was found very difficult to make a satisfactory test. The boys, however, made three trials, the first being adjudged to be about a draw game; the second resulting in favor of "Protection," of St. Clair, and the third in favor of "Torrent," of this city. We believe, however, each company claimed that the test was not under such circumstances as to bring out fully the power of their respective Engines, and we presume they

will "try again." The St. Clair engine is a new and admirably finished Button machine, and is manned by men who, with suitable practice, cannot fail to work her brakes well. We see no reason why she should not stand "Torrent" a "good pull," and presume she will be found no mean competitor when a perfect test is made.

The Fire Department of this city are under obligations both to Capt. Ward, of the *Ruby*, and Captain Dustin, of the *Dart*, for conveying them back and forth at half fare, and for freighting the engine gratis.

At two o'clock on Friday, the annual address was delivered in the Court House, by Hon. Robert McClelland. The Court room was filled to its utmost capacity, and the audience listened to the address of the Hon. gentleman with evident satisfaction. We made quite full notes of the address, but the crowded state of our columns precludes giving it as fully as we should be glad to.

The Gov. commenced by claiming the indulgence of the audience while he addressed them on a subject foreign to his profession and usual occupation. He was not a farmer, and did not claim to be as competent as he could desire to address them on the subject of Agriculture. But the invitation, coming from a people to whom he was under many obligations, he could not resist it. He hoped to present some practical thoughts that should not be altogether unprofitable.

There is an intimate connection between the plow, the loom, and the anvil; the first was the main spring of all the others. If we reflect upon the agricultural products of this country, as shown by the Patent Office reports, (statistics from which he quoted,) we shall see the importance of this branch of industry. Yet, according to data furnished from the same reports, the ratio of increase in this department of industry was far below the increase in other departments. He argued from this the necessity of an increased interest in Agriculture, and said that every

one who contributed to its advancement was entitled to great credit. Such meetings as these must be productive of good. The resulting benefits are too obvious to need comment from me. In older States Agricultural Clubs have been formed, and have resulted in great good. He suggested that such clubs might be formed in this State to advantage.

One obstacle to successful farming in this country was, that farmers were too often dissatisfied with their occupation, especially in the West. This impression was entertained of us abroad, and the migratory habits of our people contributed to it. That man is best calculated to do well, who is contented. To him this country presents rare inducements. Where has fortune been more lavish and profuse, than here? With every encouragement to devote themselves unremittingly to Agriculture, our farmers plunge headlong into speculation and extravagance. But few years since our young men and strong, carried away by the spirit of speculation, flocked to California in great numbers, with what wisdom will be seen by the result.

He also alluded to the recent rush to Pike's Peak, and deprecated the draft made upon agriculture by these periodical excitements in speculation. He said when we take into account soil, climate, and our institutions, there is no place on earth where industry and enterprise are as well rewarded. In this country no position is more honorable than that of the farmer.

The speaker next allude : to agricultural schools, and said that he doubted the ultimate success of the Agricultural School recently established in this State. He was aware that there was a difference of opinion on this question; but he had held the opinions he now expressed for many years, and had expressed them in an agricultural address at Jonesville, before the Agricultural College was established, and before the adoption of the present Con-

stitution of the State. He doubted the propriety of schools in which manual labor and study were combined. He thought the study of agriculture should be introduced into our normal schools. The instructions imparted in this way would be accessible to all. Principles would be acquired in the school that would be applied in the field. The various soils in each particular locality would be analyzed, and the whole State would become an experimental farm. The study of agriculture should be in all our schools. It elevates, refines and ennobles, and would be useful to all classes.

Many were opposed to book farming. So was he, to mere book farming. He would have the agriculturist neither a mere routinist nor a fancy farmer. He would not have a servile imitator, but he would combine the strong common sense and practical knowledge of the uneducated mind with that of the educated. The foolish failures of scientific men had brought book farming into disrepute. They had failed for want of practical knowledge. But even their failures were efforts worthy of commendation, for by their experiments they made many valuable discoveries in agricultural science.

Another drawback on the progress of agricultural science is, that experiments are treated as complete before the experiment is completed.

New theories should not be hastily adopted or rejected. If disposed to experiment, use small space, and repeat until the experiment is thoroughly made. The systematic and methodical man is the most successful.

In all improvements consult good taste. In your houses, barns, gardens, fences, roads—in everything be careful not to offend the eye.

He said great credit was due to our State for its attention to fruit; but more attention should be paid to beautifying yards, streets, &c.

Very little attention had been paid to grasses. He com-

mended this subject to the attention of agriculturists. Very few good horses are kept by farmers. It costs no more to raise or keep a blood horse than any other, and they were much finer and more valuable. Too little stock was kept in this State. Farmers attempted to cultivate too much land. The average yield of farms in this country was not more than half that of England. In Europe they have small farms, and emigrants to this country profit by the customs they have left behind, if they do not drink too deply into the spirit of speculation by which they are surrounded. Small farms are more convenient and more easily cultivated.

Want of management in the preservation and application of manures was assigned as another fault of agriculturists generally. Each soil requires characteristic manures, and these applied in suitable quantities, and at suitable intervals. The secret of the success of the English agriculturists was that they husbanded the manures. They were at great expense to bring guano, bones and other things from foreign countries, to be used as manure.

He also commended the study of Terrinary anatomy, and the diseases of domestic animals to the farmer, as not only profitable, but a dictate of humanity.

The speaker next alluded to the ambition of farmers for political position. He said an equal distribution of political offices was impossible, and that it was better for the farmer to succeed in agriculture. He could gain nothing by mingling in political strife. He did not object to politics in their highest sense, nor to farmers being interested in them. The employments of the farmer brought him in intimate connection with the God of nature, and he was not so liable to corruption as other men. He would not throw him under the polluting influences of party politics. It was our duty to cherish a people who are conservative. Let the farmer be educated, confer upon him trusts; but

never let him become a politician—never let him adopt the motto—"all is fair in politics."

The Governor made a few remarks to the women. He said a French writer had attributed the great success of Americans to the superiority of their women. A learned Bishop had once said—"Give me the education of the children of a nation, and I care not who makes her laws;" but he would rather educate the *mothers* of a nation, for in their hands were its destinies. He was an advocate of the highest education of women, but opposed to that contemptible pride which leads some to neglect all the practical duties which prepare them for good housewives.

The speaker closed by urging upon his audience the importance of a thorough and practical education.

At the close of the address, on motion of Hon. J. S. Conger, a vote of thanks was unanimously passed for the able and instructive address with which Gov. McClelland had just favored the Society.

After the address the Society repaired to the grounds, where the premiums were announced by the Secretary, after which the election of officers occurred. The people soon began to disperse, and we think, returned to their several homes, on the whole, well satisfied with the Fourth Annual Fair of the St. Clair Agricultural Society.

ST. JOSEPH COUNTY.

To the Secretary of the State Agricultural Society:

SIR—The undersigned have the honor to transmit to you the Ninth Annual Report of the St. Joseph County Agricultural Society, for the year 1859.

The annual election of officers of the Society was held at the court house at Centreville, in accordance to previous notice, on the 17th day of March, 1859, which resulted in the choice of the following persons, who compose the Executive Committee:

President—Jeremiah H. Gardner.
Vice President—Richard Dougherty.
Secretary—W. G. Woodworth.
Corresponding Secretary—David Oaks, Jr.
Treasurer—Henry C. Campbell.
Executive Committee—Andrew Perrin, Joseph Russell, S. F. Harding, L. C. Laird, Daniel Wolf.

On motion, it was

Resolved, That the next annual meeting of the Society be held at the court house in Centreville, on the first Monday in February, 1860, and notice thereof be given by the Secretary through the county papers.

The undersigned would further report that this Society was organized in November, 1859. In 1855, a permanent location for a Fair ground was made by the purchase of 17 53-100 acres of land, at $50 per acre, adjoining the village of Centreville, upon which has been erected suitable buildings and other fixtures, the whole enclosed with a tight board fence six feet in height, and the whole valued at $3,000.

A trotting course on the grounds was completed in August last, by the citizens of the village and a few spirited gentlemen of the county, free from charge to the Society.

The Society numbers at the present time 169 members. Any person paying fifty cents into the treasury, receives a ticket of membership.

Receipts in the treasury for the present year are as follows:

From members and tickets at the gate,.....	$615 10
Appropriation from Board of Supervisors,.....	137 35
Rents and other sources,.....	39 00
Cash on hand, balance in treasury 1858,.....	23 83
Total amount of receipts,.....	$815 28

Per Contra.

Paid off all old outstanding debts, am'tg to		$100 71	
" part of instalment (of $300,) for new board fence,.....		160 00	
Paid premiums,.....		281 80	
" for lumber, posts, nails, ropes, carpenter work, hay, feed, necessary attendants for three day's fair, printing bills, digging new well, pump and other contingent expenses,.....		207 19	
			$749 19
Balance in treasury,.....			$65 58

The improvements for the present year consist of one hundred and five rods tight board fence, $300; trotting course, by the citizens, $200; new well, pump, speaker's stand, and forty rods of cattle guards. It is the intention of the Society, another year, to ornament their grounds by forest and other trees and shrubs.

The Society's grounds, located as they are, central in the county, adjoining the flourishing village of Centreville, and within sixty rods of the court house, makes it easy of access to the citizens from all parts of the county.

Since the organization of the Society, its influence is marked in every department of agriculture; the production of the farm has more than doubled, new varieties of seeds and vegetables have been introduced. The English Blood and the Vermont Morgan have taken the place of the Indian pony. The Shorthorn and Devon have taken the place of the native. The Spanish Merino, the French, and Spanish, and Long-wool, are almost every farmer's pet. The farm implements from the manufactory of Elliott & Riley, at White Pigeon, are equal to the production of any eastern State, and only excelled by those manufactured at the shop of the Honorable Tom Mitchell, of Constantine. His "Buckeye" mowers and harvesters,

threshing machines, horse rakes and cultivators, occupied no inconsiderable space on our fair ground, receiving the close inspection of 1500 practical farmers. The wagons and carriages from the establishment of N. Harvey & Co., were superior in workmanship and finish. The exhibition of fruits excelled that of any former year. The syrup produced from the Chinese Sugar Cane, would compare well with Stuart's best.

We have no established library. The books and seeds received from the Patent Office have been distributed among the members of the Society.

No books, papers, or reports have been received from the State Society during the last two years. Whether we are ever to receive any light from that heretofore supposed luminous body, remains to be seen.

In a word, our late exhibition, in *all* of its departments, equaled any former one, and in *many*, far excelled, especially in stock, farming implements, domestic manufactures and fancy work.

All of which is respectfully submitted.

J. H. GARDNER,
President.

Centreville, December 9, 1859.

The following account of the Fair is from the Constantine *Mercury:*

Mr. Editor :—I visited the grounds of the St. Joseph County Agricultural Society, on each of the three days upon which the late annual Fair of that Society was held, and could not feel otherwise than well pleased with the many improvements and the good order and regularity maintained by the present able and efficient officers of the Society. Undoubtedly, many of your readers favored themselves with the same privileges; but notwithstanding that was the case, I have thought that a few reflections

and a passing notice in your columns, of the great variety of articles and kinds of fruit, and the various grades of live stock, from the native to the pure imported bloods there exhibited, would not be unprofitable at this time.

Many, I am persuaded, after viewing the different productions of nature and art exhibited by the members of the Society, and perhaps even members themselves, came to the conclusion that the whole display taken together was devoid of wonder and could excite no amazement in the mind of the most acute observer; but I ask, is this not coming to a hasty conclusion, and will the premises warrant the same? Do not such conclusions have their origin in imaginative greatness and a selfish confidence in our capability to accomplish great things, and in a majority of cases, are unaccompanied by the effort necessary to bring them into real existence, or effect even as much, and are, through sheer listlessness suffered to pass off into the emptiness of space like the evaporating essence of bottled moonshine. Is a spirit of condemnation the proper one to display toward such an enterprise? Should we not emulate, at least endeavor to equal the best and most profitable effort; and by so doing, carry out to completion the very object, aim and design of such a Society.

But a score of years have passed since the soil, the forest, and all the natural advantages within the borders of our county, might have been called the property of the aboriginal inhabitants of the American wilderness. Within that time a great change has taken place in our limits. Can any one divine the cause of this great change? What is the controling interest? What the principal object, motive and pursuit of the inhabitants of our county? To these various questions there can be but one answer: agriculture and its immediate attendant interests. To this interest we are then indebted for our present degree of prosperity. Who, after considering the above reflections, can be so misanthropic, ungenerous and inhuman, as to be-

come a mere passive observer in an enterprise which requires energy, zeal and arduous exertion to accomplish, and which, when thus engaged in, is attended with such magnificent results?

All reflecting minds agree that the present enlightenment and intelligence of the different nations of the earth, depend in a great degree upon commerce or the association and society between the different members of the great family of mankind. This being conceded, we ask, will not the inhabitants of our county, who are almost exclusively engaged in one single pursuit with its necessary attendants, be greatly benefitted by assembling together for two or three days, or even oftener, in each year, and exhibiting the various productions of their industry and acquirements, agricultural, artificial, and mechanical, and by an explanation of projected plans of improvement and reform, and an interchange of views and opinions in relation to that pursuit which is so intrinsically connected with their temporal welfare, and the future prospects of their families and friends? The answer must be obvious to all.

If one individual can derive benefit from such association or society, all may, from the fact that we are so nearly constituted alike. Why not then make it a united effort, (as it is an interest,) by the inhabitants of every part of our county, to improve these great blessings which an All wise and benificent God has so bountifully bestowed upon us? If, then, we arrive at the conclusion that it is to our interest, as well as our duty, to improve, it cannot be received in any other light than that of a misfortune, that any feelings of prejudice or jealousy should be allowed in the smallest degree to retard or thwart the advancement and success of that great and vital interest of our county, the cultivation of the soil, the improvement of its productions, and the enhancement in value of the various species of the brute creation, that draw their sustenance from its bosom, and administer to the wants and comforts of man,

Progress is the watchword of our times; improvement is so intimately connected with the idea of progress, as understood by us in this age, that they have become blended into one. Time is necessary to improvement, and consequently to progress. She never ceases to advance, and cannot be retarded or hindered by the discussion of slight or unimportant differences, but must progress. Systems may change and suns retire, worlds slumber and wake again; still her cry is advance, progress, to a higher and more commanding position. Improve the various materials, objects and interests confided to your trust.

My more particular object is to call the attention of your readers to the various articles and objects on exhibition, during the progress of the fair. Perhaps the first in order is that noble animal, the horse; about one hundred and fifty were entered in the various classes and divisions to compete for the premiums offered by the society. A more choice selection has seldom or never been seen, fit indeed, and would grace the stables of a British Peer. No one possessed of a soul worth saving, but what must have felt an inward emotion of triumph and satisfaction, as he beheld that grand cavalcade of noble animals, as they marched in double file around the grounds of the society, near the close of the exhibition.

We next notice the bovine species of different breeds and grades: A very choice lot, of the Durham breed, was exhibited by E. S. Moore, of Lockport; an excellent bull, by Mr. Austin, of Florence; another by Mr. Watt; another choice lot by Mr. Frankish; and many others by a gentleman with whom we are not familiar, of equal excellence; and we have only to unite our regrets with many others, that the exhibition of this kind of stock was not more numerous. We are well aware that a large amount of pure imported bloods and best grades, are owned by the citizens of our county, and that their numbers are steadily and rapidly increasing, and we entertain the

strongest hopes that at our next annual fair we shall see hundreds on exhibition in the place of scores at the last.

About twenty sheep, of superior quailty, would comprise the number on exhibition, which is certainly unaccountable. The wool-growing interest of our county is not inconsiderable. Many of our farmers feel a much deeper interest in their flocks in the fore part of the season, when their fleeces are readily turned into cash, than at the season of our fair, when winter is not distant. Is this consistent?

Several superior lots of swine were in the pens on the ground appropriated to such animals: A very choice lot by Mr. Austin, of Florence; another by Edward Talbot, of Centreville; and other lots, not inferior.

One of the first objects to meet the eye of the visitor and to fill it, too, on entering these grounds, was a goodly number of fine carriages, double and single, and farm wagons, manufactured by the enterprising builders (of Constantine) of such useful vehicles, and various other necessary implements and tools, used by the inhabitants of our county. No one who can appreciate the beautiful and useful, but what would admire with pride the many excellent farming tools, such as the plows, manufactured by Mr. Hasbrook, of Centreville; the fanning-mills, mowers, reapers, &c., which were so prominently displayed for the examination and scrutiny of all who might feel an interest in such articles.

Some rare specimens of fruit and ornamental trees were exhibited by D. B. Williams, of Sturgis. Mr. Williams keeps constantly on hand a large and choice assortment of such trees, and will, with a good grace, accommodate all those who wish to purchase.

I wish, especially, to call the attention of your readers to those beautiful specimens of marble structure, exhibited by Messrs. Drake & Bailey, also Messrs. Huyler & Sheaiden, of Sturgis. Their fine polish, excellent engraving,

and general sculptural finish, are not surpassed by any similar establishments in the country. Such memorials are becoming, with great propriety, more and more generally used, as time advances and a proper christian spirit is inculcated, to mark the last resting place of departed friends, dissevered affections, and undying love.

In the building on the society grounds were exhibited different varieties of the very best kinds of fruit and garden vegetables, not even surpassed, we have good reason to believe, by Eden's choicest specimens; and none forbidden. In the upper hall of this building, some very fine specimens of art were exhibited. Flora, too, had induced some of her devotees to exhibit rare specimens of those angelic smiles produced from the bosom of mother earth, which are the special objects of her care and attention. Flowers are born of the love of earth and heaven. They bloom for love, for life, for death. No family should be destitute of a portion of ground, set apart for their especial cultivation. They enliven, beautify and adorn the walk, the garden, the field and wood-land, the mountain's declivity, the river's border, and the silent dell. They soften the asperities of the human heart, sweeten the temper, radiate the contenance, and add soul and life to beauty. I have only to add my sincerest wish with many others, that every portion, article and object, on exhibition at the last, may be increased an hundred fold at the next annual fair of the society.

A CITIZEN.

VAN BUREN COUNTY.

The report of the Treasurer, in brief, exhibits as follows:

March 9, 1859, received of F. Adams, orders cancelled, ... $180 59

Cash received of F. Adams,.....	$9 16
" " County Treasurer,.....	60 81
Total,.....	$69 97
Amount paid out on orders,.....	60 81
Balance on hand,.....	$9 16

There is yet due the Society from the county fund, $63 89, and from E. Durkee, on note, $15 00; making in all due the Society up to date of 28th September, 1859, the sum of $78 89.

O. H. P. SHELDON,
Secretary.

WASHTENAW COUNTY.

R. F. JOHNSTONE, ESQ., *Sec'y State Agricultural Society:*

SIR—I herewith send you the Annual Report of our Society for 1859, according to a resolution of the Board of Managers, passed February 1st, 1860.

Very respectfully,
J. E. TAPPAN,
Cor. Secretary.

Ann Arbor, June 30, 1860.

This has been eventful year in the history of the Society. As far back as 1856, at a meeting of the Executive Committee, held on the 20th of February, a resolution was offered and passed to locate the Annual Fair permanently in the city of Ann Arbor, provided its inhabitants would raise the sum of two thousand dollars towards this object, and a committee was appointed to carry out the resolution. At a meeting held on the 7th of October following, this committee reported that the above amount had been pledged by the citizens of that place, whereupon the Executive Committee passed another resolution, confirm-

ing their previous one, of the 20th of February, locating the Annual Fair permanently at Ann Arbor. This action was not suffered to pass without considerable discussion and opposition on the part of those who wished to have the Annual Fairs held at different towns throughout the county, in turn. At a meeting of the Executive Committee, held on the 16th of October, 1858, a resolution was introduced, repealing all previous action in reference to a permanent location, which, however, was laid upon the table. At a meeting held on the 6th of January, 1859, it was finally resolved that it was the opinion of the Executive Committee, that a permanent location of the place of holding the Annual Fairs of the Society, as determined by previous action of the Society and its Executive Committee, would tend to promote an economical administration of its affairs, and advance its true interests. By this time the sum of $3,325 had been obtained in good notes by the locating committee, with a fair prospect of more, the agreement made with the subscribers to the fair ground fund being as followf:

"It is stipulated and agreed by the committee on location with the signers of these notes, that the notes are none of them to become binding until at least two thousand dollars in amount are signed by responsible persons residing in the city of Ann Arbor, and at least two thousand dollars by responsible persons residing in the county outside of the city of Ann Arbor."

It was subsequently agreed that the first payment on these notes was not to become due until January 1, 1859, and other payments to be made annually, and no interest to accrue until notice is given by the committee that the money is wanted for the purposes mentioned. On the 5th of May they reported to the Executive Committee that they had made a contract for twenty acres of land, which report was accepted and adopted.

At a meeting held on the 1st of August, a committee

was appointed to draft a revision of the Constitution, and report at the annual meeting. This was held on the 11th of October, when the committee presented a report, which was first adopted by the Executive Committee, and on the same day, at the annual meeting of the Society, taken up and passed unanimously. The Constitution, as revised, is as follows:

—

CONSTITUTION.

ARTICLE 1. This Society shall be called the Washtenaw County Agricultural and Horticultural Society.

Art. 2. The object of this Society shall be the advancement of Agriculture and Horticulture in this County.

Art. 3. Every person resident of this county may become a member of this Society, by paying to its Treasurer one dollar, and having his name and place of residence entered in a book kept for that purpose, which membership shall continue until the close of the Annual Fair of the year of such payment, and no longer, unless he shall continue a member by paying one dollar each year. He shall be eligible to an election to office at the next election after the Fair, which shall be vacated if another dollar shall not be paid by the first day of the next Annual Fair, and any person resident of this State, who has or shall hereafter pay twenty dollars or more in one payment, or by subscription and payment of five dollars, or more payments to the amount of twenty dollars, all within three years of such subscription, may constitute himself or any person he shall designate, (one person for every twenty dollars,) a member for life, to whom shall be issued a certificate of membership, entitling him to all the privileges as a member during his life, to extend to his widow after his decease, and to his children during their minority. Such life members may vote by proxy.

Art. 4. The officers of this Society shall consist of a

President, five Vice Presidents, a Recording Secretary, a Corresponding Secretary, a Treasurer and an Executive Committee, consisting of one from each town and city in the county, all of whom shall be elected by ballot, by the members of the Society, at the annual meeting in each year, and shall continue in office until others are elected or appointed in their stead.

Art. 5. The annual meetings of this Society shall hereafter be held on the Fair grounds belonging to the Society, or in such place in the city of Ann Arbor, as the Board of Officers shall designate, on the first Tuesday of January, in each year, at 11 o'clock, A. M., for the election of officers, and the transaction of such other business as may be deemed necessary. Fifteen members shall constitute a quorum of all the meetings of the Society. There shall be a Cattle Show and Fair held at least once each year, at such time as shall be fixed by the Board of Officers, on the grounds in Ann Arbor, belonging to the Society, for the purpose of exhibiting domestic animals, manufactures and produce of the farm and garden, and for competition for premiums.

Art. 6. The President, or in his absence, one of the Vice Presidents, shall preside at the meetings of the Board of Managers of the Society, and at all exhibitions or Fairs of the Society.

Art. 7. The Corresponding Secretary, shall under the directions of the Board of Managers, receive and answer all communications addressed to the Society, or any of its officers, and perform such other duties as may from time to time be assigned him by the Board of Managers.

Art. 8. The Recording Secretary shall keep a record of the proceedings of the Society; he shall also be Recording Secretary of the Board of Managers, and shall keep a record of their transactions.

Art. 9. The Treasurer shall receive all sums due the Society, and all donations received for its benefit, and dis-

burse them only on the order or orders of the President, countersigned by the Recording Secretary. He shall keep account of his receipts and disbursements, and report the same annually to the Board of Managers, and oftener if required. He shall execute a bond to the Society, for the faithful performance of his duties, in such penalties and with such sureties as the Board of Managers shall require.

Art. 10. The Board of Managers may fill all vacancies that may occur by death, resignation, ineligibility or otherwise, among the officers of the Society; and the persons so appointed shall hold their offices until others are elected or appointed in their place.

Art. 11. The Recording Secretary and the Treasurer shall each have an office in the city of Ann Arbor, except when on the fair grounds, where the books of the Society shall be open for the inspection of any member of the Society during business hours.

Art. 12. There shall be no salaried officers, but the Board may allow a reasonable compensation to any officer, as well as others, for money paid out for the benefit of the Society, and for all services actually rendered, having regard to strict economy, and presuming the honor of holding the office will, generally, be deemed a sufficient compensation for all ordinary duties of it, except on the days of the fair.

Art. 13. Any person residing out of this county, may compete for premiums, by a yearly payment of such sum, (not less than one dollar,) as the Board of Officers shall direct; no others but such as are members of the Society, shall be allowed to compete for premiums, except Ladies, for domestic manufactures.

Art. 14. This Constitution may be altered or amended by a vote of two-thirds of the members present, at any annual meeting, the nature and wording of such alteration being published in a newspaper in Ann Arbor, at least ten days previous.

Art. 15. The officers of the Society, five of whom shall form a quorum, shall constitute a Board of Managers, for the general administration of the affairs of the Society. They shall have the full power to enact such laws as shall be deemed expedient; to appropriate the funds to the proper objects of the institution; to appoint committees; to convene special meetings of the Society; to hold the annual exhibition, and to make all arrangements therefor; to appoint examining committees to award such premiums as may be offered by the Society, and determine all matters connected therewith; to take charge of and distribute plants, seeds, books, &c., or whatever may be transmitted to the Society, and to concert, arrange and publish addresses and other communications, together with the proceedings of the Society, at such times and in such form as they shall deem best calculated to promote the objects of the Society. They shall have the oversight of the grounds belonging to the Society; shall make all necessary by-laws concerning the same, forbidding their being used for any purpose contrary to the design of the Legislature in their law allowing the Society to hold property; they shall not permit, or allow their agent to permit, any kind of gambling on the grounds, nor the gates to be open on the Sabbath day, for horses or carriages to enter the grounds; nor shall they at any time allow spirituous liquors to be sold within the enclosure, or any portion of the premises owned by the Society. They shall appoint an agent to superintend and take charge of the ground, and all the property of the Society, except books and such as properly come under the charge of the Secretary or Treasurer. Such agent shall have authority to prosecute and carry on any suit in the name of the Society, for any trespass or damage to the grounds or property of the Society; shall hold possession of the land in the name and on behalf of the Society; and may appoint a man to keep the gates and allow visitors to enter the grounds, under such restrictions

as the Board may direct; the agent to remain such until another shall be appointed in his place.

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Under the above Constitution the following Board of Managers was elected for 1860:

President—Horace Carpenter, Pittsfield.

Recording Secretary—Newton Sheldon, Lodi.

Corresponding Secretary—J. L. Tappan, Ann Arbor.

Treasurer—J. F. Miller, Ann Arbor.

Vice Presidents—Calvin Wheeler, Salem; William F. Welch, Sylvan; Norman A. Phelps, Scio; E. M. DeForest, Ann Arbor Town; J. B. Arms, Webster.

Executive Committee—J. B. Vannatta, Salem; W. S. Waterman, Superior; Henry Compton, Ypsilanti; J. W. Childs, Augusta; E. W. Basour, York; Nathan Webb, Pittsfield; G. D. Hill, Ann Arbor town; Moses Rogers, Ann Arbor; Zenas Bird, Northfield; E. L. Boyden, Webster; C. L. Gregory, Scio; Randolph Davis, Lodi; Wm. U. Pattison, Saline; D. W. Palmer, Bridgewater; Asa Williams, Lima; Ormond Clarke, Lyndon; H. C. Boyd, Sylvan; E. Arnold, Dexter; Andrew Robison, Sharon; W. S. Carr, Manchester; W. F. Osins, Freedom; D. M. Uhl, Ypsilanti town.

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The following are extracts from local papers:

THE COUNTY FAIR GROUNDS.

A few days since we visited the grounds of the Washtenaw County Agricultural Society, and noted the improvements made under the direction of the Business Committee. The grounds contain nearly twenty acres, an addition having been made to the lot purchased of Mr. White, by purchasing six rods of J. D. Baldwin, adjoining on the east. The whole has been enclosed with a high and substantial board fence, the posts of which are cedar, and are

set so deep as to be very little affected by the winds. This fence will need very little mending, and will, therefore, be a source of no expense for years to come. On the western line a street has been opened from the road in front to the back line of the grounds, the Society and Mr. Hill each giving two rods. This street furnishes the stock and carriage entrance to the grounds, thus avoiding the inconvenience of a front entrance. It also affords a place for fastening horses, and thus prevents blockading the street in front.

At the north-west corner of the grounds is a large shed, a temporary building for the exhibition of vegetables, grains, etc., etc. Farther east, and at equal distances from the front, two permanent buildings have been erected, we presume to be christened Floral Hall, and the Hall of Domestic Manufactures. These buildings are octagon in form, are set upon a brick foundation laid in mortar, are shingled, sided, painted, and furnished with doors and windows. They will protect the finest fabrics from the injurious effects of sun, wind and storm, and in case of the latter, will effectually shelter the visitors. We fear that the Business Committee have made a mistake in not building on a larger scale, a mistake, however, which can be remedied in coming years by converting them into offices and erecting new structures. The ticket and entrance offices are equi-distant between the buildings described, fronting on the street, with, we believe, an entrance gate on either side.

A horse track has been prepared in the rear of these buildings, and widening towards the rear of the grounds, just one-third of a mile in circumference, and across which it will not be necessary for any visitor to go to reach any department of the Fair. The stock railings and pens for sheep and swine had not been erected, but we presume will skirt the sides and rear, and near the rear a well has been sunk which will furnish an abundance of water for

the stock. Such is a general view of the interior arrangements.

The amount subscribed for the permanent location—if promptly paid in, as it will be—is enough to pay for the grounds, carry out all improvements, and leave the Society free from debt, and thus save from year to year the enormous expenditure heretofore charged to the account of fencing grounds and erecting temporary buildings. For this success much credit is due to the efficient committee which has left no stone unturned to secure the permanent location.—*Michigan Argus, Oct.* 7.

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THE FAIR.

The Fair was held on the new grounds of the Society, situated adjoining the city limits, on the south-eastern side. The grounds we described somewhat in our last issue, and will only say that they were in excellent order, when the short time the Business Committee has had the management or charge, is taken into consideration. The substantial cedar posts used in the erection of the fence, were forty days ago growing in the woods of Sanilac county, five miles from any navigable water, a fact which will show the dispatch made by the committee, as well as account for any imagined short comings.

The weather was pleasant on Tuesday, and the number of visitors on the grounds and of entries, was as large as usual on the opening day. Wednesday morning a storm was threatened, but about nine o'clock it cleared away, and exhibitors and visitors began to pour in from all directions. The Superintendents of the various departments were hard at work arranging the entries, and before noon it was voted a success. It is estimated that at one o'clock P. M., there were full ten thousand people on the grounds, and the receipts at the Treasurer's office show that the estimate is rather under than over.

The number of entries of horses was very large, and included many excellent animals, workers, roadsters, carriage horses and trotters. The track for their display was in good condition, and was as always, one of the great centres of attraction. The show of cattle was large and excellent. There were Durhams, Herefords, Cross-bloods, Grades and Natives. There were some fine specimens, and among them the breed of Durhams belonging to D. M. Uhl, of Ypsilanti, one of the most extensive growers of this breed in the country. The Messrs. Bowen, of Lima, exhibited some Herefords, a breed noted for its milking qualities.

The show of sheep, the great staple of the county, was very large, said to exceed largely the exhibit at the State Fair. We counted over one hundred pens the first day, and venture to say that no other county in the State can make such a show of sheep.

In the vegetable department, there was a display that banished all fears of great famine; of potatoes, we counted seventy baskets, and such potatoes! they were of all varieties, and all sizes, except *small* sizes. We never saw such a show of potatoes. And there were sweet potatoes, turnips, squashes, pumpkins, beets, cabbage, etc. etc., all of mammoth growth, and beans, peas, corn, wheat, barley, oats, butter golden and sweet, cheese, bread, etc. etc. This department was No. 1.

The show of fruit was principally confined to apples, of which a better show never was made. The varieties were numerous, and the specimens perfect. There were a few plates of peaches, and a few of pears, it being too late in the season to make a great display of these fruits. C. H. Millen, exhibited a case of grapes grown under glass, containing sixteen varieties which were tempting enough, and also several plates of the standard out-door varieties.

Floral Hall, and the Hall of Fine Arts were well filled with paintings, engravings, photographs, beautiful and elegant specimens of needle-work, all tastefully arranged, for

which the ladies in charge of these halls are entitled to great credit. These halls were continually crowded, and it was an impossibility to make a note of particular articles of interest.

There was a good show of agricultural implements, including threshers, reapers, mowers, plows, stalk-cutters, stump-machines, clover-hullers, etc. etc. Also, a sorghum crusher, with Cook's patent evaporator, which was turning out delicious syrup. Also, a large show of elegant carriages, and a great array of stoves, not exactly farm implements, but just as necessary articles.

The Fair closed in a heavy rain storm, which was fortunately postponed to "the last day in the afternoon." As we said before, it was a success, and without doubt the largest Fair ever held, in any county in the State, for which great credit is due to the efficient managers of the Society, the exhibitors, and the visitors generally.

The entrance receipts were almost seventeen hundred dollars.—*Michigan Argus, Oct.* 14.

WASHTENAW COUNTY FAIR.

The opening day of the fair was Tuesday; and at 10 o'clock we were on the grounds, and proceeded to visit the various institutions.

We noticed as present with cattle, the following: John Starkweather, of Ypsilanti, exhibiting one pair twin five year old, handsome red oxen, weighing probably forty hundred pounds. It is said these cattle took the second premium at the State fair. W. H. Hawkins, of Ypsilanti, exhibited one full blood Durham cow and calf. Horace Lathrop, of Pittsfield, exhibited one yoke of native oxen, and other blood young stock, among which was a cow said to give sixty-five lbs. of milk per day. Esq. Arms, of Webster, exhibited a cross of full blood cattle.

With horses we noticed the following: R. Corbett, of

Saline, exhibiting one two year old bay "of all work." Wm. Rheinfranck, exhibiting one four year old "Eclipse" stock horse. Wm. R. Waldron, of Webster, exhibiting mixed blood, two years old, one year old, suckling, and brood mare. John Doody, of Dexter, with a fine bay mare yearling "of all work." J. L. Wing, of Scio, with two two year old geldings, of class 2, and H. Anderson, of Scio, exhibiting one yearling stallion.

Sheep.

The general interest in wool-growing was manifest, from the large and choice assortment of sheep on exhibition. Among the exhibitors, we noticed R. Corbett, of Saline; J. Leland, of Northfield; A. Wood, of Lodi; G. S. & J. S. Wood, of Lodi; L. S. Wood, of Lodi; Edward Boyden, of Webster; Alvah Inman, of Lodi; Geo. Inman, of Lodi; R. Davis, Lodi; Jesse P. Gillett, Manchester; W. S. Crafts, of Sharon; Whittaker & Jeffries, Dexter. The sheep were chiefly of the Spanish Merino, Silecian and South-down breeds.

Swine.

In this department there was a fine display, but we have no space for particulars.

Floral and Fine Art Hall.

Here things were somewhat mixed. The large number of exhibitors of the fine arts occupied not only the hall set apart for them, but crowded into Flora's apartment; and there we saw confectionery castles and brocha shawls vieing with the jewels of that Goddess.

We visited the fine art hall on Wednesday morning, and as we fell in with the irresistable current of life within, were carried forthwith to E. H. Crane's revolving, self-setting game and rat trap. Catching rats is decidedly a fine art, therefore this machine was not out of place; and especially was it not when we consider that this curious, ingenious, and complete working machine was the centre

of attraction, while on the ground. When this trap is set, it will catch a rat, kill him, throw him away in a box, and set itself for another, and so continue to do until it has caught fourteen. It is a decided success, and no chance for a failure. Mr. Crane is of Burr Oak.

Mechanics and Farming Implements.

The list of entries in this department was large. Among the machines that were "taking the eye" of first-class farmers, was Birdsall & Brokaw's combined Clover Thresher, Huller and Cleaner. This machine has taken the first premium where it has been exhibited, viz: New York, Michigan and Ohio State Fairs. It is one of those truly valuable improvements in which manual labor and money are saved to the farmer, by the application of mechanical principles. It threshes, hulls and cleans from four to six bushels per hour, and wastes not a kernel. The agent, Mr. C. B. Hibbard, 156 Woodward Avenue, Detroit, sold two of them on the ground. Mr. Hibbard had, also, Hallock's combined Cross Cut and Circular Saw Mill on exhibition. This mill is made simple and strong, is easy to operate and not liable to get out of order. J. G. Leland, of this city, bought the one on the grounds at $85.

Mr. U. B. Daley, of Salem, exhibited a one-horse clover picker, of which he has the county right. This machine combines simplicity, cheapness, durability and beauty, and does its work admirably.

Messrs. Dow & Covert were on hand with their eight horse power Threshing Machine, and gave it a very fair test by threshing and cleaning a quantity of oats. The machine is of light draft, and was run first by two span, then by a single span, and finally by a single horse, and the work gave general satisfaction. G. Hely's Equalizer was atttached to the horse-power of the aforesaid machine, and in the experiments tried, fully proved its perfection and adaptation. Among the Cultivators we noticed Forsbee's patent cast-iron Cultivator, on the jointed paralello-

gram principle, exhibited by Daniel Kirstead. It is simple, light, durable, and costs only ten dollars. This Cultivator has five teeth and a coulter, and may be set at various widths. C. S. Goodrich also exhibited Corn Planters, Cultivators, Plows, etc. A. D. Hoffman, of Belleville, had on exhibition a model of his late patent hand-power Cider Mill. This is a new thing, and is one of those ingenious improvements which are objects of interest to every farmer, and everybody who is not a farmer. Mr. H. has two sizes; by one, a man can make a barrel of cider in two and a half hours—with the other, two barrels in the same time. A boy ten years old can run either mill.

The celebrated "Buckeye" mower, that carried off the first premium of the U. S. Agricultural Society, at their trial in Syracuse, in 1857, was on exhibition. This machine has sustained its high reputation in Michigan, Maryland, Virginia, and Connecticut. It took the first premium a few days since at the Michigan State Fair. Waters, Lathrop & Co., of Jackson, will build the "Buckeye," hereafter.

L. W. Bodwell, of this city, had on exhibition, Cook's Sugar Evaporator, and worked it to the satisfaction of those interested in sugar-making, His experiment was a success. He produced the nicest syrup from the cane in about thirty minutes.

It was generally remarked that a better collection of vegetables had never appeared at the county fair. A curious thing turned up here, under the title of "California Pie-Melon," which purports to have come originally from Japan. It is said the kind grows to the weight of 30 or 40 lbs., keeps two years without difficulty, and makes a pie difficult to distinguish from apple.

Judge Kingsley's address came off at 2 P. M. It was an interesting and eloquent production, prepared in the Judge's best style, and gave good satisfaction.

The Steuben Guards Band enlivened the occasion with

their capital music. The City Guards, with their new band, were on parade, and made an attractive and pleasing display. The crowd of visitors numbered probably between 8,000 and 10,000. It was a goodly sight to see the sturdy yeomanry thus gathered together, and happily nothing occurred to mar the pleasure or dim the splendor of the day.—*Ann Arbor Journal, Oct.* 12.

THE FAIR.

To say that the Society was eminently successful at this exhibition, is only feebly to express the truth. In everything that constitutes success, the fair was pre-eminently blessed. The weather for the first two days, and most of the third, was very propitious, and nothing occurred during the three days to mar the enjoyment of the thousands who came from all parts of the county to enjoy this annual coming together of the agriculturists and artisans of "Old Washtenaw."

The serious difficulties that have for some years existed between different portions of the county, which had their origin in the action of the Executive Committee, by which the exhibitions were permanently fixed at Ann Arbor, have in a great measure subsided, and a strong disposition to harmonize their interests was manifested by the people of all parts of the county, at the late fair.

The show of Durhams was very fine, embracing nearly all the best herds in the county. It has often been remarked in our hearing that the eastern portion of the county has always placed on exhibition at our fairs, in the class of Durhams and Devons, superior specimens; while the middle and western portions have excelled in crosses and grades. We think it is so. We learn, however, that there is some very fine Durham stock on the farm of Judge Dexter, in the town of Dexter, but it has not been known at our fairs.

We notice that H. Lathrop, of Pittsfield, took the first premium on his splendid milch cow. This award was

richly deserved, for she is, without doubt, the best cow in the county, and perhaps, in the State; and, indeed, Mr. Rome, the chairman of the committee on that class, informs us that he has never seen her equal in any portion of the old country for butter. This is a high compliment to Washtenaw county.

We cannot omit to notice specially the three year old Durham bull of Mr. E. M. DeForest, of Geddesburgh. In our opinion, his equal in all respects is not to be found in Michigan.

Horses were well represented. We notice that J. B. Newland, of this city, took the first premium on his four year old colt. This colt was sired by Mr. Newland's Morgan horse, and is probably the best colt of his age in the county. He cleared the track of all competitors.

Of sheep, there was an immense show, in fact, Washtenaw challenges the whole State to show better sheep than were exhibited at our Fair.

In the department of farm implements, we noticed an atmospheric churn, entered by Mr. T. U. Tooker, of Ypsilanti, which struck us as being just the thing for butter makers.

The address of Hon. James Kingsley, was worthy of the high reputation of the author.—*Ann Arbor Local News, Oct.* 18.

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LIST OF ENTRIES AT THE WASHTENAW COUNTY FAIR.

Cattle.

Durhams,	27
Devons,	14
Herefords,	4
Cross of full bloods,	19
Grades,	31
Natives,	9
Matched steer calves,	3

Working oxen and steers,	6
Fat cattle,	41
Number of entries,	127

Horses.

Horses for all work,	336
Carriage horses,	145
Blood horses,	16
Number of entries,	497

Sheep.

Spanish Merinos,	59
French Merinos,	5
Saxons and Silecians,	17
Cross of full bloods,	88
Grade ewes,	19
Leicestershires,	8
Southdowns,	8
Fat sheep,	5
Number of entries,	159

Miscellaneous.

Swine,	28
Poultry,	28
Butter and cheese,	60
Clothes, quilts, &c.,	78
Furniture and carriages,	50
Farm implements,	59
Fruit,	85
Vegetables,	172
Grain, flower and seed,	116
Needle work,	30
Paintings and drawings,	17
Flowers,	11

Miscellaneous articles, Gent's department,	71
" " Ladies' "	74
Number of entries,	869
Total number of entries,	1,652
Total amount of receipts at the gate,	$1,633 32

The following is the report of the Committee on fat cattle and milch cows, made at the eleventh exhibition of the Washtenaw County Agricultural and Horticultural Society:

Your committee is very sorry to see, and to have to report so small a show of fat cattle; but have further to report two of the most extraordinary cows that ever came under our observation, for their quantity of milk and butter: One gave 65 lbs. of milk per day, and 20 lbs. of butter per week; the other 57 lbs. of milk per day, and 14 lbs. of butter per week!

Mr. Coleman, of Boston, in his travels in Europe, to get the best agricultural information, found no such cows. The best he found was an Irish clergyman's cow, called the "Kerry Cow," a small breed of cows, which gave 13 lbs. of butter per week. The next was a Durham cow, in the county of Durham, which gave 17 lbs. of butter per week.

If Michigan can beat all other countries for milk and butter, Mr. Lathrop should have a special premium over the premiums awarded by the Society.

ROBERT ROME,
Chairman Com.

ADDRESS

Of the Hon. James Kingsley, before the Washtenaw County Agricultural and Horticultural Society, at the late Annual Fair.

The passing year has brought to us again the Annual Fair for this county. Each succeeding year seems to increase the interest which the people feel in the cause of Agriculture.

In some countries far more attention has been paid to the science of agriculture than in this. Not because we are less intelligent and enterprising, or less anxious to make labor more profitable and our land more valuable; but because necessity has not compelled us to extra exertions to produce the necessaries of life, as in some other countries.

From the earliest settlement of this country through its whole extent, land has been comparatively cheap and labor dear; hence it has been the object, if not for the interest of the American farmer, to make the most from his land with the least labor.

Commencing on the Atlantic coast, the tide of population in two hundred years has moved on over a great part of our national territory, leaving behind it, often, fields once fruitful, exhausted by bad culture, to be regenerated by the art and labor of those who might come after.

This is all natural. The husbandman has taken that course which he claimed most for his interest. Necessity did not drive him to gain a scanty livelihood from a few acres of land. He knew that he was in a land of plenty. He feared no famine. Never, since the suffering of the Pilgrims for the want of food, has this country been seriously threatened with famine; small portions of it may have been. So extensive is our country, extending as it does, through many degrees of latitude, embracing almost every kind of soil and climate, and affording all the productions which the actual wants of man require, that it is

scarcely within the range of possibilities that any general cause, flood, or drouth, or heat, or cold, will ever produce in it, not to say a general famine, but not even a general want of the necessaries of life. The people throughout our wide domain, neither in the cities or country, fear such a calamity. Hence they have not felt as deep an interest in the cause of agriculture as some other people have.

The season just passed has been marked by a more extensive destruction of growing crops, by frequent frosts, than any other season remembered by those living, unless the year 1816 be excepted; yet there will be no famine.

Now let us look to another country, England, whose people are beyond dispute the most scientific and successful cultivators of the soil, and rearers of domestic animals, of any people on the globe. In those callings they are the teachers of all nations with whom they have intercourse. In the mechanic arts, and in commercial enterprise, Americans will not yield the palm to England, but in the great business of Agriculture they must. Americans are not willing to admit that any other people can excel them in any useful pursuit—in anything which requires for its attainment, skill, industry, and perseverence. Yet our most enterprising and intelligent farmers, those who contribute most to make our annual fairs useful and attractive, bring to them cattle, sheep, and swine, imported from England or descended from those which have been imported. We have the Devons, the Durhams, the Herefords, the Alderneys, and other foreign cattle. We have Leicestershire, Suffolk, Woburn, Berkshire, and other foreign swine. The Merino, Leicester, Southdown, and other foreign sheep. But where are our native breeds improved by our native breeds of domestic animals? They are not here.

If the best agriculturists of England and Scotland could come to the annual fairs of this country, and report upon the conditions and products of their farms, and exhibit

samples of their products, they would be seen to surpass us in everything in the art of husbandry except in the production of Indian corn, an article which they cannot produce. For this state of things a cause has existed and does exist in the different circumstances of the two countries and their inhabitants, which fully accounts for the great progress of the people of one country in the most necessary and useful art of husbandry, without any disparagement to the people of the other country.

The Island of Great Britain is not much larger than some of our States, and not as large as one, Texas. It has been fast filling up with people; its population has increased nearly three-fold within the last century. The agricultural productions of the Island have not, for many years been sufficient for the wants of the people. They expect an annual deficiency of grain. Critical indeed, is the condition of that country, which cannot within itself produce a sufficiency of food for its own inhabitants.

All England knows this. Hence the great anxiety among its people, from the prince to the peasant in relation to the growing crops and harvest. The inquiry is, what is the condition of the harvest crop? What may be the deficiency in the island, and whence shall a supply be obtained? In a country of that limited extent, a season too wet, too dry, or too cold, would induce a famine. Hence the best energies of the people of that country with their wealth, talent, industry and skill, are exerted to improve its general husbandry.

Some have directed their attention to improving breeds of cattle, to make them more valuable for the shambles, for draught, or for the dairy. Some have directed their skill to improving their native breeds of horses, sheep and swine. Others have directed their powers to increasing the productions of the earth by judicious culture and well directed labor. In their pursuits they have succeeded with great advantage and credit to themselves, and sub-

stantial benefit to other nations; not merely by their example, but by the real productions of their enterprise.

I have said the circumstances of the two countries, and of their inhabitants are different, which will account for the unequal progress made in the pursuits we are considering.

In England, common farming lands, for farming purposes alone, are worth from three to five hundred dollars an acre. A late English paper noticed a recent sale of such lands, the prices of which ranged from three hundred to five hundred and forty dollars an acre. The prices of improved farming lands in this country, may range from ten to one hundred dollars an acre—unimproved lands much less. The difference in the price of labor, in the two countries is less, but it is considerable.

Suppose one hundred years ago, the whole continent of Europe had been one uncultivated space, sparcely inhabited by tribes of Indians which would secede before the tide of emigration. Fix the price of lands at a mere nominal sum—a dollar or two an acre, and leave all the inhabitants of the British Isles free to move into any part of that extensive region, not a more extensive field for emigration for the inhabitants of those Islands, that long ago, than was our unsettled country for *its* inhabitants at this time. The English, the Scotch and the Irish, could have gone into the valleys and broad plains of that region, moving with pleasure from place to place, from the more barren to the more fruitful parts as did the early inhabitants of this country go forth over its valleys, hills and plains. If such had been the state of things, the condition of the inhabitants of the two countries would have been assimilated, and their present conditions not so unlike. The rough hills and barren heaths of Scotland would not have become fruitful fields. England would not have won thousands of acres from the sea, and made her waste and moor lands a garden. Ireland not have reclaimed her fens and bogs,

nor would she have lost in one year a million of her people by starvation. Nor in any of those countries would land have arisen so high in value, or labor have fallen to so inadequate a price. So we may see it was a particular necessity that brought about the great improvements in agriculture, and in rearing domestic stock in the old country. Necessity is the mother of more than invention; it is the parent of much substantial good. To secure the success of any great general object, it is necessary to enlist in its favor the general feelings and efforts of the community. Instance the cause of education throughout a great part of our country. It is only a few years since that a few patriotic men in the State of Massachusetts, Rhode Island, Connecticut, and perhaps some other States, began to awaken the public mind to the subject.

For some time the good cause gained slowly upon popular favor. Those who had no children objected to aid in the education of the children of others. The rich were unwilling to be taxed according to their property for the education of the poor. Legislators came reluctantly to the aid of the cause, and very many were unwilling to incur the expense of erecting more commodious buildings for schools, and for procuring more competent teachers. But the enterprising few who led the way, persevered. They gave an irresistible impulse to the public sentiment; the reluctant yielded. States opened their treasuries, and the rich their purses, to aid the growing cause; the people gave up their cheap school houses, and their cheap teachers, and each city, village, and town, is now vieing with the other in furnishing whatever will most promote the cause of general education. Now observe briefly how the interest of the people of this country has been enlisted in the great business of agriculture and its accompanying pursuits; a subject hardly less important to a nation than education itself. The agricultural communities generally have not been awakened to the importance of their occu-

pation, until within about the last twenty years. True, some societies for the promotion of agriculture had before that time been established in different parts of the country; but comparatively few seemed to take any interest in them; and they failed to enlist the feelings of the great body of the farmers in their favor. About 20 years ago an agricultural society was formed in this county, the first in the State, but for want of encouragement, it lingered along a few years and died. Many other like county societies in different parts of the country, from like causes, ceased to exist. Subsequently, by exertions of the press, the enterprise of some individuals, the increased value and importance of the products of the farm, and the aid of the different State and county authorities, a new impulse has been given to the cause; and societies for its promotion have sprung up in every State, and in almost every county throughout the United States. Among the last comes the United States Agricultural Society, which held only its Seventh Annual Fair a few weeks since at Chicago. The whole people are enlisted in this; and like the cause of education, it must prosper.

A marked and general error in farming in this country, as noticed by the observing, is the neglect to establish a systematic and judicious rotation of crops, and to practice a clean and thorough culture of the soil. It is well known if one kind of grain is sown successively on the same ground, the crop will soon fail, and the soil in the end, tire of it. Repeated experiments have proved that other crops can be substituted to a greater advantage; that the earth will make more ample returns by substitution of crops, than by persevering in the cultivation of crops belonging to one family. So true has this been found, that judicious farmers of this country and Great Britain consider rotation of crops the most important feature in modern husbandry.

It has become an established truth, that a proper rota-

tion of crops, judiciously carried on, will, upon every renewal of the series, add to the mean quantity of the produce. But to effect this, there must be the best culture; the land must be thoroughly and deeply pulverized, and kept free from weeds; and there must be returned to the land as much manure as would be made from it during the series of crops. In the rotation system in this country, Indian corn is the most important, both on account of its value, and the culture necesary for its profitable production. It is a strong feeder, and to it the manure should be applied. In the culture of it, all weeds shou'd be eradicated; that is the very object in having a cleansing crop in the rotation. But, is one in which we too often raise the weeds.

In Great Britain the turnip is the most important crop in the rotation system. It returns most to the land, and is considered indispensable to good husbandry. An English farmer, a few years ago, it is written, offered to give any one ten pounds, if he would find in his field of turnips, of a hundred acres, a single weed. We should be unwilling to give a dollar apiece for the weeds that might be found in our corn-fields.

On a former occasion, when addressing this Society, I urged the importance of giving more attention to the raising of roots for stock. It was objected then by some, that it was folly to talk of raising turnips in this country, when we could raise Indian corn; that they could not raise that grain in England, and they raised roots as a substitute. It is true they cannot raise Indian corn in England, but it is not true that they raise roots as a substitute. They raise peas and English beans there as field crops, and more to the acre on an average than we do of Indian corn here. Those products are more nutricious than corn, and are fed out to stock of all kinds there, ground or unground, as we feed corn here. And large quantities of our corn are imported into Great Britain, at a price little beyond its

price here; yet require the farmer to forego the cultivation of roots, and you would destroy the very foundation of British husbandry.

The premium crops of ruta-bagas in Scotland, have reached as high as seventy-five tons of bulbs, and twenty tons of tops to the Scotch acre—which is one-fifth larger than our acres. In the State of New York, fifty tons of ruta-bagas have been raised to the acre; and in the State of Massachusetts, one thousand bushels of carrots have been produced to the acre. These are facts that have been well authenticated. What has been done can be done again. Of the value of such crops, you must judge. The time will come when the American farmer will think the cultivation of roots, as a field crop, indispensable to his success in agriculture.

Great improvements could be made, by reclaiming many of the swamps and marshes, which abound in many parts of our State. Some of these swamps are utterly worthless to their owners. They poison the atmosphere by their miasmi; they are unsightly to the eye, and are the harbors of noxious weeds and loathsome reptiles. With less expense than is required to bring into cultivation heavily timbered land, or to reclaim wet upland by underdraining, these plague spots on the earth could be converted into pleasant and fruitful fields. This can be effected by the judgment and labor of man.

No general rules can be laid down for accomplishing this object. The condition and extent of the marsh itself, and of the surrounding lands which furnish the springs, and cast their surplus waters into it, must be considered. In doing this, the head will have as much to do as the hands. This much may be said in truth: the outlet to the marsh to be drained, must be so large; the main ditches so deep and wide; and the lateral ditches so many, that they will carry off the surplus water on the land so soon that it will

not injure the growing crops. When that is done, then the work of draining is done.

The peaty, vegetable soils, though resembling each other in appearance, are substantially different. Some are mixed with earthy matter, which gives them more consistency, and makes them more productive. Other peats, which are formed by the decomposition of aquatic plants, have not the resources of earthy particles, and are less valuable on that account.

All those vegetable soils which are so deep that they cannot by cultivation, be mixed with the subsoil, lack consistency and earthy matter, and those qualities must be added by mixing with them whatever of lime or clay, sand or gravel, can be supplied.

There is another kind of land on many farms, lying between those marshes and the higher lands which surround them, partaking of the nature of both. A soil composed of the muck of the marsh and the fertilizing deposits of earth, washed down from the adjacent high lands.

This kind of land is generally too retentive of moisture, and is often made more wet, by the springs that break out at the foot of the higher land. All that is wanting to make such soils almost inexhaustibly fertile, is thorough drainage. Here let the under-draining commence. The testimony of all who have adopted that system of treating such lands concur in proving it one of the most valuable improvements in modern husbandry.

Another subject to which the attention of farmers may well be directed, is the care and improvement of our domestic stock. Increased attention has been given to the subject of late years. But by whom, and to what extent? By those few who have imported foreign stock, or purchased it here at great expense.

Even in such cases, there are not wanting, instances in which the improved stock has been suffered to deteriorate

for the want of that attention and care which produced them in the old country. All the improved breeds of cattle, hogs and sheep, which are imported into this country from England, and the improved sheep from France and Spain, have been reared up, it is well known, from native breeds there, not in any way superior to our native breeds. And how has it been done? By a continued, judicious system of breeding, and the greatest attention to the full feeding and comfort of the improving stock. Nothing more. Who has ever attempted the same thing in this country? If any one has not, why? Is there anything in our soil or climate, that forbids success in the undertaking? There is not. Where then is the farmer of enterprise in this country, who will, by the application of his practical good judgment and persevering industry, rear up a race of cattle here to be called the Washtenaws, which shall equal in fame the Durhams and the Devons? Some one can do this, and let him who is ambitious to establish a wide-extended reputation, and of being known as a benefactor to the human family, commence the work. If care and attention to all the wants of domestic animals for a long time, will not only improve a race, but make a new one; so want of care and attention for a length of time will destroy the good qualities of a race of animals. It is a true rule, and works both ways. Now what is our common method of raising stock? In the first place, the farmer often sends the best of his young stock to the butcher, because it is larger and fatter, and will bring a better price. This is a bad beginning. Then instead of keeping the animal in a growing and thriving state from the time it begins to grow until it gets its full growth, (which is the true system,) it is suffered to be fat or poor by turns, as its wants are satisfied or neglected. I am not now speaking of a universal practice, but a very common one.

A good sized pair of working oxen in usual flesh, on the

setting in of winter, will weigh about 3,000 pounds. As they are often kept through the winter, they will not weigh more than 2,000 pounds in the spring. The same may be said of any other full grown domestic animal. They are often allowed to fall off during the winter full one-third in weight, and this for the want of a little more and better food, and perhaps more for the want of a warm stable and dry resting place. The consequence of this treatment is, that the owner has lost on the yoke of oxen, 1,000 pounds of beef and tallow during the winter, which is worth fifty dollars. The oxen have actually consumed, —to speak in significant language—have eaten up one-third of themselves, to carry them through the winter; and this is not the hair and bones, for *they* seem to flourish under this treatment, and are able to *stand up for themselves.* Often we feed our horned cattle in the winter on beef and tallow, our sheep on mutton, our hogs on pork and lard, and our horses on horse flesh—all expensive articles—when good hay can be purchased for less than half a cent a pound, grain for less than a cent a pound, usually, and a bushel of ruta-bagas can be raised for the price of a pound of fresh beef.

This unthrifty practice in managing farm stock, is nothing new. As did those who have gone before us in that respect, so do we. It is remarkable how an erroneous practice in husbandry may become established among an intelligent people and pass along unchecked for a long course of years. Instance the universal method of cultivating Indian corn in New England, and perhaps in other parts of the country until within a few years past. I mean the practice of plowing between the rows of corn in a late stage of its growth, and drawing the earth up into a hill about the corn. The farmer who paid a man one dollar a day for drawing the earth from the extended roots of the corn and piling it about the stalks, could have better afforded to pay another man two dollars a day to draw the earth

all back again from whence it was taken. The first settlers of the country found the Indians raising corn, and that in cultivating it they made a hill around it, so that practice was followed by the white people for more than two centuries, not reflecting that the Indian is not an intelligent cultivator of the soil, and that his practice in that respect contravened one of the plainest laws of nature.

Another error of opinion in farmers, and an error which may and does affect their practice, I think not unworthy of notice here. It is on the question, whether wheat will, or will not, under certain conditions of seed and soil, turn to chess. A question upon the opinions of men of equal judgment are wholly different. The transmutation of wheat to chess is no new doctrine. Pliny, who wrote nearly two thousand years ago, says in his natural history, "that the greatest of all evils to wheat is oats, and that barley will degenerate into oats. And this degeneration of wheat and barley into oats, he ascribes to a moist soil, wet weather, bad seed, &c." In Italy, chess is called wild oats. Pliny, in speaking of oats undoubtedly meant chess. Doctor Webster in his dictionary, under the word chess, says: "I do not find the word in any English dictionary; nor do I know its affinities." In New England, he says: "It is a grass which grows among wheat, and is supposed to be wheat degenerated or changed, as it abounds most in fields where the wheat is winter-killed. It bears some resemblance to oats." He alludes to the opinion of Pliny, and says, "his opinion coincides with observations in America, as wheat is most liable to perish in moist land, and often in such places almost all the wheat is killed, and in place of it chess often appears." But he says, "this change of wheat into chess is now denied, and the common opinion is affirmed, by the ablest botanists to be erroneous." And so he left the question. Here is an error somewhere, and it is due to the intelligence of this age that it be detected and exploded. Beyond all doubt it *was* almost, if not quite

the universal opinion in America, where wheat is raised, that it turned to chess under certain circumstances. Many believe some other grains turn to chess. Pliny thought barley did. I knew a family of young men who were farmers, residing near this place in an early day, who said the first crop of wheat which they attempted to raise, turned to chess, and in the same field the next year, where they had sown no seed of any kind, they had a fine crop of timothy. Their neighbors also bore witness to the fact. They were as sure that the chess turned to timothy as that the wheat turned to chess.

In the last September number of the Albany Cultivator, there is notice of a communication from a man in Connecticut, in which he relates a case of rye turning to chess, as he believes; and he asks the editor if it was not thus transmuted where the chess came from, and the Cultivator man tells him, very truly, that *he does not know.*

So it is seen this chess is a notorious weed, and is getting more so. It seems to be increasing the sphere of its power to metamorphose other plants into its own form and nature, and it may well be asked, what next?

Botany is comparatively a modern science. The most eminent Botanists have told us, "that wheat and chess are a distinct genera, and that they never did, and never can change from one to the other." This brought thinking men to thinking on that subject, and to investigating it.

Some of these men are so well assured that the transmutation is impossible, that they have in the last ten years offered large rewards for proof that wheat will turn to chess. Some have tried to furnish the proof. I knew a man of intelligence and good judgment, a few years ago, who tried to turn wheat into chess. He said he selected the worst seed he could find, and planted it on ground not likely to produce wheat, and where it would be very likely to turn to chess, if it could be so. He abused the wheat plants that did come up, in every way he could invent to

bring about the transmutation. He cut off the tap roots of some plants, and the tops of others, and succeeded in getting some winter-killed, and then waited anxiously to see what would turn up, for he was after a hundred dollars reward, which was offered for the proof. But he said although he raised the meanest wheat that anybody ever saw, he did not raise one grain of chess.

Again, some have attempted to prove in a number of instances, that wheat will turn to chess, by showing grains of chess apparently growing out of a head of wheat, and with the wheat. Instances of that kind, it is said, have happened in this country. Such heads of wheat and chess have been submitted to examination by those who have applied for the offered reward, and it has been found that there was no actual connection between the chess and the wheat head.

In the last September number of the Albany Cultivator you may find the following article, which appeared to be a letter from a man in Indiana, and the Editor's remarks upon it. The writer says:

"Having read with interest the various investigations in reference to wheat turning to chess, and being a firm disbeliever in such transmutation, my faith has been somewhat staggered this evening by being shown a head of wheat bearing both wheat and chess, having all the appearance of being firmly attached. The chess has sprouted and grew out from the wheat near the lower part of the head, and appears to be as much a part of it as any of the grains of wheat composing the same. The gentleman who has shown it to me wishes to claim the $500 reward offered for evidence of the transmutation of wheat to chess, and believing that the sample before us now, comes nearer a demonstration of that proposition than anything that has ever been produced, wishes to know through your kindness, more particularly how to proceed in the matter. Will you be so kind as to inform me in reference to the

reward, and the necessary evidence to obtain it, if it is still offered, and by whom it is offered."

(Signed,) ENOR HOOVER,
Frankford, Ind.

The Editor says:

"We are sorry to disappoint our friends about the $500, but if they will take the trouble to examine their head of wheat carefully, they will see by bending down the chaff directly under the chess, that the chess did not grow out of the wheat head, and that there is no actual connection between the wheat and the chess, the latter being held in its place only by the pressure of the wheat upon it. We have seen a number of such heads, and it never took over a minute to convince those who presented them to us that the chess did not grow on the wheat plant."

Still, the question comes back, where does the chess come from? I do not know, and if I did know would not tell, as no one will be believed if he does know, and tells.

Some things may be considered which bear on this question, and the whole subject of the tillage of the earth. It is, according to the economy of nature that the earth shall produce something. Nature abhors a waste as it does a vacuum. Where there are earth, air, moisture, heat and light, there will be vegetation. If the earth does not produce something of worth, it will bring forth something worthless. You never saw a spot of earth left to itself, bare of vegetation for any considerable time. It is another principle of nature that change is incident to all *created* things. This is true, even with regard to races of men, and all animals, as well as to all the productions of the earth.

The trees of the forest perish, and are succeeded by a different growth of timber, and the humbler plants pass away and are followed by those of a different kind. There is not wanting full evidence that since the settlement of this country, whole old forests of timber have been de-

stroyed by time, hurricanes, and insects, and their places filled with entire different growth of timber. The oak has been in some places succeeded by the hemlock, in others by the beech and maple. And a growth of beech and maple has been followed by the oak and the ash. In South Carolina, for years back, a certain insect has been destroying the pine forests, and universally it is said, on their destruction, a thick growth of oaks spring up in their places, where no oak was ever known before.

It may take ages to make the change, but an age in the course of nature is but as a day to us. This is change, not transmutation; and from it the intelligent farmer may learn the necessity for a rotation in crops.

Go into the thick forest, a hundred miles from any inhabited spot. You shall find nothing there but huge trees, and a few stunted underbrush; not a weed nor a flower, nor a spear of grass. Cut down and burn up the forest trees, and from their ashes will spring up the fire-weed, so called, and other weeds for which you know no name, and which could not before be found in all the forest. Go on with the improvements, build a barn, and cultivate the land about it, bring on the domestic animals upon your farm, cultivate a garden, and raise a crop of grain upon the cleared land, and what will come on in quick succession? The whole family of domestic plants and weeds, some useful, more useless. Then come the native grasses, and without fail white clover. All the kinds of vegetation which you left behind you five hundred miles have followed you to your new home, and flourish in a soil where they were before unknown.

Where are the lilly and the lupine, and the humbler flowers, and the rose-willow that once carpeted these grounds over which some of us used to walk? They were the wild companions, so to speak, of the Indian and the wolf, and like them they are gone. A quite different

herbage has taken their place; strange would it have been to the tenants of the forest.

You sit and stand upon ground which was once the bed of an ocean, a salt ocean. Its depth was thousands of feet over this ground; mountains of ice floated upon its surface. Its waters at a time, washed up these higher lands, and swept out those valleys below. You cannot go out of this place and observe an excavation in a bank of earth, without seeing the different layers of pebbles, sand and gravel, which the receding waters washed up.

There was a time then, when this Peninsula, and the far regions round, was for a season void of vegetation. How was it clothed? Who planted the oak and the hickory upon these plains? the linden, the beech, the maple, and the elm on the lower lands? Who clothed the earth with its various herbage, and caused the green grass to creep up the sides of the mountain, close upon the line of the receding ice and snow? Who planted the willow by the running brook and the pine upon the hills? Some say the birds and beasts spread the seed. Did the bare earth wait for that slow process? Whence came the birds and beasts? On what did they subsist before the earth produced anything? If the birds and beasts did sow the seed, they showed great discrimination in planting each variety where it would best flourish.

But others say the seeds always were in the ground. If so, and they lay at the bottom of old ocean for ages, they were a long time in soaking.

Is there any heresy in saying that the Almighty, who created the universe, could and did in His own way and own quick time, clothe this earth with vegetation and verdure, when He had dried up the waters of the deep?

It is said that the young men of the rising generation, who have been employed in the cultivation of the earth, are prone to abandon the occupation of the farmer, and

seek employments which they fancy are more honorable, less laborious, and more profitable. From this cause it is said, in the rural districts, in the older States, there has been a decrease in population, and an increase in cities, large towns and villages. Is it not an error to abandon the occupation now, just at the time when the practical farmer begins to be encouraged in his pursuit; when produce of all kinds finds a ready market; when the means of transporting the productions of the earth have become ready and cheap; when the mechanic and manufacturer have furnished improved farming implements, and created new machines to ease the burden of labor; and when the great west is offering her treasures to the cultivators of the soil?

The steam plow just invented will make a new era in agriculture on the western prairies. The time is close at hand, when one neighbor there shall say to another, I want you to break up for me a field for corn this spring. How large is it? Five hundred acres. I will do it next week. That dialogue will be spoken on some prairie of the west within five years, and the work will be done according to the promise.

No age or country ever before opened so wide a field for the enterprise, industry, and skill of the cultivators of the soil, as now lies before you. In cheap and fertile lands, cultivated and uncultivated; in the varieties of soil and climate; in the varied productions of our widely extended territory; in ready markets and easy communication.

Who is to occupy that region in the west, extending from the Gulf of Mexico in the south, to the British Dominions in the north? A land more than a thousand miles in length, and hundreds of miles in breadth; lying in the centre of our National Territory, midway between the two great oceans; having a climate the most healthy; a soil the most fertile; a surface diversified by mountains and valleys, hills and plains, and threaded by numerous rivers.

The policy of our Government for years past, in disposing of the public lands, renders it far easier for a farmer of small means to obtain a farm in a new country, than formerly. He is allowed to select and occupy the land without paying for it; and often remains upon it long enough to make the purchase money from his farm, before it is necessary to pay for it.

The law, too, graduating the price of lands, has made it very cheap in some States. In Missouri, it is said, good land can be purchased of the United States for one shilling an acre. I do not say these things to encourage emigration; but if it be necessary for young men, who have been accustomed to farming, to leave the rural districts, it is not necessary for them to go into the cities, and villages, and change their occupation; nor is it advisable. There is room enough yet in the country for the farmer. His occupation, more than any other, insures independence. It is most congenial to his nature. It is the occupation for which he was made. It is peaceful promotion of health, and insures a competence. The poet says:

> "Reason, whole pleasure, all the joys of sense,
> Lie in three words, health, peace and competence."

There is a pleasure in owning land unlike that which you have in possessing other property. Land is fixed and enduring. It will not burn up, run away or perish. It is yours. You have an interest in all the earth lying beneath its surface, and in all the blue sky above it. No one is allowed to dig under it, or to obstruct the light or view above it. It is a heritage from our Maker; capital bestowed, designed to be used for the benefit of man. He who receives it rough from nature and turns it into a well cultivated farm, with the necessary buildings and improvements to make it both pleasant and useful, will be very likely to live a peaceful and happy life, and at its close will have the consolation to know that something remains, the work of his own hands, which will be beneficial to the world he leaves.

KALAMAZOO COUNTY.

[The following proceedings were unintentionally omitted in the publication of the Annual Transactions of the Agricultural Society of this county.]

An Executive meeting of the Kalamazoo County Agricultural Society was held at the office of the County Clerk, on Monday, the 3d day of October, 1859, for the purpose of the examination and adjustment of all matters of business pertaining to the late Fair of the Society.

On motion, the Treasurer of the Society, Hiram Arnold, submitted his report relative to the receipts of the last Fair, which was accepted, as follows:

REPORT OF THE TREASURER—FAIR OF 1859.

272 memberships sold at $1 each,.....		$272 00
1238 single tickets, 15 cts. each,.....	$185 70	
Discount loss on sale of tickets,.....	2 48	
		183 22
88 team tickets, 25 cts. each,.....		22 00
Cash taken at team entrance,.....		23 42
" of Waldron & Fox, (eating stand,).....		20 00
" of J. B. Cobb, (2 water casks,).....		1 00
Total receipts,.....		$523 64
Discount on uncurrent bill,.....	$0 50	
" for broken bank bill,.....	1 00	
		1 50
Net receipts,.....		$522 14

On motion, the following accounts against the Society were allowed, as follows, to wit:

Gibson & Wagner, stationery,.....	$1 06
Fish & Merrill, mill feed,.....	1 94
W. H. Pendleton, cleaning well,.....	1 00
Smith L. Wood, hay, 2½ tons,.....	25 00
W. A. Clover, night watch,.....	2 00
W. H. Cobb, labor, team, &c.,.....	9 75
Hugh Rollins, drayage,.....	3 00
Chas. A. Thompson, Jr., services,.....	6 00

Geo. Torrey, for services,	$6 00
F. Little, cash paid for sundries,	10 60
A. C. Balch, police,	17 50
H. Hydenburk, labor,	4 00
Chas. Wadhams, self and man,	24 50
L. Kellogg & Son, lumber,	64 95
Babcock, Cobb & Co., merchandise,	4 51
J. Flagg, labor,	2 62
R. S. Gage, labor,	1 50
M. A. Allen, stationery, &c.,	6 94
Clark Earl, labor,	1 50
Gazette Office, printing, &c.,	46 25
Telegraph, " "	19 50
I. D. Bixby, lumber,	24 88
Frank Little, services, &c.,	50 00
H. Arnold, sundries,	8 40
Rice & Allen, casks,	2 00
H. Arnold, account at team gate, &c.,	10 50
Total,	$354 82

The receipts of the last Fair falls short of premiums awarded and expenses, some $250.

A full statement of the financial affairs of the Society will be published in January next.

The Executive Committee awarded to W. T. Mills, of Galesburgh, Mich., a diploma for a very superior Clover Picker on exhibition.

The Executive Committee, awarded a diploma to Isaac Thompson, Theresa, N. Y., for a model of Nutting's Fanning and Assorting Machines on exhibition.

On motion, two entries of I. Burdick, of a pair of calf pegged brogans and pair of gents' sewed patent leather gaiters, were ruled out, as not having been made within the last year.

On motion, the award of $5 to Benj. Drake, for best Durham bull, was over-ruled for want of pedigree, and the

award given to M. Hydenburk, for best Durham bull, with pedigree as per rule.

On motion, the following committees were appointed: To audit accounts, Messrs. Arnold and Little; To settle with Treasurer, the President and Secretary.

Resolved, That this Society is under great obligation to their worthy President, F. W. Curtenius, for his many labors in behalf of the Society for the past year, but more especially for his able address delivered before the Society at its late Fair, and the many valuable practical suggestions contained therein.

Resolved, That the public thanks of the Society are due to the local press, to wit: The *Telegraph* and *Gazette* for the many flattering and voluntary notices of the Society and its movements, that have appeared from time to time in the columns of each, and the spirit of interest ever manifested in all matters pertaining to the welfare and advancement of the Society.

Resolved, That the Society desire to acknowledge with gratitude the many aids received from citizens in fitting up and decorating the various buildings of the Society.

Resolved, That this Society is not unmindful of the kindly favors received through the notices of the Press throughout the State, and their many flattering acknowledgments, and gratuitous efforts to give publicity to the late Fair.

On motion, adjourned *sine die*.

F. W. CURTENIUS,
President.

FRANK LITTLE, *Secretary.*
Kalamazoo, October 3, 1859.

The fourteenth Annual Fair and Cattle Show of the Kalamazoo County Agricultural Society, was held at Kalamazoo, September 21st, 22d and 23d, A. D. 1859. Gen. F. W. Curtenius, President of the Society, delivered the annual address.

A persistent rain-storm, continuing through the entire three days of the fair, might well be considered as the "principal contending points;" but the observation closed without a "veering," notwithstanding the presence of the great *theory* embodiment, Prof. Ryan O'Ryan! and reduced the probable entries and attendance more than one-half. Much interest was manifest previous to the day of opening, and but for the rain we have the assurance that the fair would have been by far the largest one ever held by the Society.

Persons intending to claim premiums, must do so within sixty days, as by the rule.

SECRETARY'S REPORT.

At the annual meeting of the Society, held in January, 1859, the fee for membership was fixed at one dollar, which was the same as at the organization of the Society.

This step was only taken upon mature deliberation, and a careful consideration of the true interests of the Society.

The subject of procuring some permanent grounds, and the erection thereon of suitable fixtures, to belong in fee to the Society, has been a matter of earnest solicitude on the part of the members of the Society, the Executive Committee and Officers, for a number of years past.

Many plans for the attainment of the desired object were at different times submitted. But the great obstacle to the accomplishment of this purpose was the want of means. Although the interest in the Society was of a healthy character, the attendance at the Annual fairs respectable and constantly augmenting, and, for the last two fairs just preceding the one last held, the receipts (including the amount received from county treasurer,) were slightly in excess of expenses and premiums awarded; yet the correct idea of progress, based upon the fact that Kalamazoo county, in point of Agricultural resources, and the

spirit, enterprise, and pride of its inhabitants, is emphatically the Model County of the State, as also, that this Society is the oldest organization of a like character, in the State—and in view of the increasing interest manifested by the patrons of the Society, and the commendable exertions made at each succeeding fair to make each excel the other, demanded a corresponding increase of the premium list, and facilities for accommodating the crowds of nature's noblemen that flocked to the annual gatherings.

While the price of memberships remained at fifty cents the receipts barely kept pace with the expenditures; the fixtures were but of a poor, coarse, leaky, temporary character; the lease upon the present grounds soon to expire, and none other to be obtained only at a considerable distance from town, except at great expense.

A proposition to reorganize the Society under the general act of the Legislature, and the issuing of life membership tickets at the rate of from twenty to twenty-five dollars each, for the purpose of raising an immediate fund, was at one time held under serious consideration, and a correspondence was held with some other Societies organized upon the same basis, with reference thereto. But upon farther reflection, that idea was abandoned, as being decidedly objectionable in many respects, but more especially that that peculiar feature or field of financial operations had been previously very thoroughly explored and engrossed in this county for various other objects, ostensibly of a public character. Also, that while many, and most likely all, would be willing to pay one dollar annually, for the support of the Society, and the privileges of membership, comparatively few would wish to purchase a life ticket, and pay in advance some twenty-five dollars.

Mere money-getting should never be a prominent feature of the Association. Agricultural Societies are formed for other and nobler purposes. The benefits derived from agricultural exhibitions are, that they not only excite

a spirit of emulation, but great encouragement is given to improvements in all matters connected with the cultivation of the soil. They stimulate the inventive genius of the country—the free interchange of opinions and methods in farming at such a time, are highly beneficial—the public addresses are oftentimes of incalculable value in point of statistics, information, and suggestions embodied therein. No one pursuit is so intimately connected with our national prosperity as Agriculture; and these annual exhibitions richly deserve encouragement and patronage by all who have the true interests and welfare of the community at heart. Now, land cannot be purchased, buildings erected, grounds prepared and arranged, premiums paid, with the costs for fitting up and carrying out the necessary arrangements of each successive fair, without means to meet all these unavoidable expenses. As has been previously stated, the revenue has but just met the ordinary expenses; and although some might feel, and properly, too, that these annual meetings partake more of a social character, and they did not wish to view them as being anything of a burden or tax, yet no marked advancement could possibly be made, while the circumstances and conditions remained unchanged. Again, as a matter of equity or proportion, and as of comparative value, the memberships were too low; as by the rule, members and their wives, and all their children, (exclusive of sons and daughters over twenty-one years of age,) could any and all of them have free access at any time to the fair during its continuance, and any and every one of them (except as above) could compete for premiums, and if their entries were sufficiently meritorious, receive and carry away, it may be, fifteen or twenty dollars of premium money, and for the whole only pay into the treasury of the Society, the sum of fifty cents. Multitudes of our staunch and wide-awake farmers will cheerfully pay from three to

twenty dollars for the privilege of entering a single animal, it may be, to compete against the world, at a show or exhibition of a special character, or leave home to attend a "State," or "National" fair and foreign show, and pay in railroad fares, hotel and carriage bills, tickets, &c., from fifteen to twenty-five dollars, but apparently, it may be, begrudge the small sum of one dollar per annum, that shall go to the support of their own County Society, the maintenance of which is undeniably of far more vital importance and value to themselves and their families.

It is estimated upon a careful examination, that the average number of admissions upon a membership ticket at such a county fair, will amount in the aggregate to eight. The calculation is, that the average is four persons that attend the fair on each of the two last days, with one membership ticket. Now eight single tickets, at 15 cents each, amount to $1 20, which is 70 cents more than a membership ticket, covering the same number of admissions at 50 cents, and 20 cents more than the same at one dollar; and it must be remembered that with single tickets there is no right of entries for competition, and only one admission to the grounds.

The premium lists and regulations of the following Agricultural Societies have been received, and the fee for membership in each is one dollar, (and that of Calhoun, twenty-five cents for a single ticket,) to-wit: Branch, Berrien, Cass, Calhoun, Eaton, and Kent counties.

A proposition has been made to the Society, and grounds can be obtained contiguous to the village, in quantity more or less, as may be advisable, admirably adapted to the purposes for which it is desired, at the sum or rate of one hundred dollars per acre, in ten annual payments, at seven per cent. per annum; and with ordinary success, and the hearty co-operation of our citizens, an excess of from one hundred to one hundred and fifty dollars, (which includes the amount usually received from the county) over expen-

ditures, can reasonably be anticipated from the annual Fairs to make a yearly payment upon the purchase, and aid in the erection of appropriate buildings upon the same. As far as any expression upon the plan proposed has been obtained from members of the Society and citizens, it has been unanimously declared as decidedly preferable to an organization as a stock company, and the raising of a fund by the sale of life memberships. It is earnestly requested of the Supervisors of the county that at the coming meeting of the Board, or at some early day that they may designate, they meet the Executive Committee of the Society for the purpose of conferring together upon this subject, and the examination of grounds relative to purchase for the use of the Society.

All of which is respectfully submitted.

FRANK LITTLE,
Secretary.

By order of the Board of Officers and Ex. Committee.
Kalamazoo, Oct. 3d, 1859.

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The following persons were chosen officers of the Kalamazoo County Agricultural Society, at the Annual Fair, September, 21st, 22d and 23d, 1859, for the ensuing year, to wit:

President—Elijah O. Humphrey, of Richland.

Secretary—Frank Little, Kalamazoo.

Cor. Secretary—A. D. Allen, Kalamazoo.

Treasurer—Hiram Arnold, "

Executive Committee—Philo Vradenburgh, Kalamazoo; Eli R. Miller, Richland; J. B. Cobb, Kalamazoo; Stephen Eldred, Climax; Eli Douglass, Texas.

Vice Presidents—The Supervisors of each township in the county.